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Refinery Siting and the Regulatory Process: A Case Study in Coastal Zone Management

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REFINERY SITING AND THE REGULATORY PROCESS: A CASE STUDY IN COASTAL ZONE MANAGEMENT

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John Garretson Brokaw III

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GLOSSARY OF ACRONYMS

APCB	Virginia Air Pollution Control Board
BACT	Best Available Control Technology
BPCT	Best Practicable Control Technology
BSS	Virginia Bureau of Shellfish Sanitation
CAA	Clean Air Act
CAP	Citizens Against Pollution
CARE	Citizens Against Refinery Effects
CBF	Chesapeake Bay Foundation
CBI	Chicago Bridge and Iron
CEQ	Council on Environmental Quality
COE	Council on the Environment
CORPS	U.S. Army Corps of Engineers
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
DHI	Virginia Department of Highways and Transportation
DOE	Department of Energy
DOI	Department of Interior
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FTZ	Foreign Trade Zone
FWPCA	Federal Water Pollution Control Act
FWS	Fish and Wildlife Service (Dept. of Interior)

HREC	Hampton Roads Energy Company
HRSD	Hampton Roads Sanitation District
LAER	Lowest Achievable Emission Rate
MACEC	Mid-Atlantic Clean Energy Center
MARA	Mid-Atlantic Refinery Associates
MOIP	Mandatory Oil Import Program
MRC	Virginia Marine Resources Commission
NAD	North Atlantic Division of the Corps of Engineers
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMHC	Non-Methane Hydrocarbons
NMFS	National Marine Fisheries Service (Dept. of Commerce)
NOROF	Nansemond Oil Refinery Opposition Fund
NPDES	National Pollution Discharge Elimination System
NWRR	Norfolk and Western Railroad
OASA (CW)	Office of the Assistant Secretary of the Army (Civil Works)
OCE	Office of Chief of Engineers (Dept. of Army)
PFEIS	Preliminary Final Environmental Impact Statement
PSD	Prevention of Significant Deterioration Certificate
RHA	Rivers and Harbors Act of 1899
SIP	State Implementation Plan
SMT	Security Marine Terminal
TITC	Tidewater International Trade Commission

TMDL	Total Maximum Daily Load
TROF	Tidewater Refinery Opposition Fund
TVDC	Tidewater Virginia Development Council
VEPCO	Virginia Electric and Power Company
VEQA	Virginia Environmental Quality Act
VIMS	Virginia Institute of Marine Science
VOPPA	Virginia Oyster Packers and Planters Association
VOC	Volatile Organic Carbons
WCB	Virginia Water Control Board

ABSTRACT

The proposal by Hampton Roads Energy Company (HREC), to build a refinery in Portsmouth, Virginia has generated eleven years of controversy, involving all levels of government and the scientific community. At issue is the estuarine site chosen for the refinery and the possible impacts on the marine resources and citizenry of the area. State and federal environmental laws contain licensing and review procedures to oversee development in the coastal zone. Permits for air, water and submerged lands use include air quality standards and effluent limitations, and may be further modified if required, by each regulatory agency. While these procedures have opened administrative review to public scrutiny, they also have been criticized for causing delays. This study explains that review process as it was applied to HREC and notes some delay may be attributed not only to the regulatory agencies, but to environmentalists, to the promoter of HREC, to the absence of a coherent national energy policy and to the Arab oil embargo. Although some changes have been made in regulation and processing, it appears any new proposal with similar impacts would encounter like problems. Of greatest priority to government should be a siting mechanism that includes the inventory and screening of potential industrial sites.

REFINERY SITING AND THE REGULATORY PROCESS:

A CASE STUDY IN COASTAL ZONE MANAGEMENT

CHAPTER I

INTRODUCTION

1.1 The Energy-environment conflict

A significant social development of the past decade has been an increasing public awareness of the environment.[1] People are no longer complacent about the quality of their surroundings, according greater significance to aesthetics and public health. The era of unregulated pollution is past as society grapples with the by-products of its expanding technology. Changes in education evidenced by the study of ecology and environmental sciences reflect growing public and academic interest. These newly formed values have influenced public policy, law and the economy in ways which are slowly becoming apparent.

Concurrently the complexion of energy supply has changed. The Arab "oil embargo" in 1973 precipitated what is now termed an "energy crisis".[2] Increased imports meant increasing dependence on an unpredictable supply. The economy of the Nation, based on the ready availability of cheap energy, has been built on a diminishing and insecure resource. Demand for petroleum hydrocarbons has far outpaced supply, encouraging further domestic exploration, production and major energy development in coastal areas. Siting of energy related facilities in these areas has capitalized on the proximity of urban markets and the availability of low cost bulk water transport. Yet coastal regions are a valuable resource for other reasons, providing a broad range of environmental, recreational and commercial uses. And

therein is the nexus of the energy-environment controversy: how to utilize and yet protect, when the effects of development are uncertain and involve some element of risk.[3] Government response has not integrated the controversy but is primarily directed toward protection of the environment.

1.2 Government regulation: an overview

Concern for the environment has manifested itself in a spate of legislation recognizing the right of an individual to a safe and healthy environment. Government regulation occurs since the private market fails in assigning costs to common resources.[4] The use of air and water for waste disposal has been encouraged by the low relative "prices" assigned to them. The costs of pollution are not borne by the polluter but by the public and unfortunately the benefits of pollution control rarely accrue to the controlled industry.[5] In effect the economy is regulated to keep production and consumption within environmentally acceptable limits.

Fundamental problems exist in present policy and legislation. Limitations in economic and scientific methods hinder evaluation and efficient decisionmaking.[6] Unfortunately the costs to society of varying levels of pollution and regulation are only now being understood.[7] These and other problems have been offered as an explanation for much of the ambiguity evident in environmental law, ambiguity producing indecision and reluctance to act by a regulatory agency.[8]

Not surprisingly in such a milieu, state and federal regulatory agencies have been widely criticized.[9] Business and industry cite interminable delays for needed government reviews, that escalate costs and hinder long range planning. They claim overlapping jurisdiction among government agencies causes needless paperwork and duplication of effort. The environmental review process, where incorporated in a permit, is criticized as ponderous, a tedious collection of scientific jargon too susceptible to the dilatory tactics of environmental opponents.[10] By contrast environmentalists state the environmental review must address all impacts and may therefore be lengthy, time well justified when contemplating an irrevocable commitment of resources. They also charge, however, that permits and reviews are too often perfunctory exercises for a decision already made. And that some regulatory agencies act more as industry advocates than as protectors of the environment. Economists label the process as wasteful of scarce resources of capital, labor, and administrative skills. They argue persuasively for more economic incentives in the government's control strategies, and underscore what the public already knows to be true, that the costs of delay, inefficiency and pollution control technology are ultimately borne by the consumer.[11] In short, the regulatory permitting process has few advocates. The need for improvement of the present system is obvious. Substitution of a new system, requiring more years of refinement and familiarity, does not appear to be a viable alternative. At no time are the shortcomings of present regulation more evident than during examination of a "major facility," termed so for the broad scope of

its environmental impact and magnitude of its capital investment. In this category fall such developments as power generating plants, airports, large industrial firms -- and refineries.

1.3 The case study

The present study examines a proposal by an aggressive developer for a refinery in the coastal zone of Virginia and its progress through the regulatory review process. It is neither an economic justification nor an environmental condemnation. Rather it is a case study warranted by its attendant controversy.[12] It spans the breadth of the energy-environment conflict and places in perspective the attributes of current regulatory processing. Reputedly the largest capital venture in the state of Virginia, the refinery caused problems of unparalled magnitude. Citizens were forced to weigh the economic well being of a local community against air and water pollution and the speculative danger of oil spills. Predictably, discussion was emotionally charged, to a point where each side in refutation sounded surprisingly like the other. The facts lent themselves to controversy, which eventually involved all levels of government. The proposal evolved during a time of unique change in public values, environmental law, and energy policy and supply. Each had its own especial impact on the proposal.

It is the purpose of this study to fulfill several objectives related to the proposal and the regulatory process. The first is to provide as dispassionate and concise a chronology of events as

possible. In retrospect many of the reported events lose their significance and even obscure more important events. Public misconceptions prompted overstatement and distrust of state agencies. Many relate to understanding the statutes and regulations. Therefore it is relevant to explain the administrative process of each regulatory agency, and its enabling legislation. From this a discussion and explanation of each agency's actions is provided. Often the reasons for an action were not widely known. As external events - national and international - affected the review, these too are examined. Provided in conclusion are not only the reasons for delay but suggestions for change based on the analysis. The majority are not arcane but could be intuited from the beginning, and relate to simplification or shortening of the process. Indeed, some changes have already been made affecting the time of processing. These are briefly mentioned.

Reference materials were gleaned from interviews, files, reports and memoranda of individuals and public and private agencies. An exhaustive file of articles from area newspapers was initially compiled to provide a complete overview eventually exceeding 1200 articles.[13] Correspondence and documents from the Office of the Governor, Council on the Environment, the Air Pollution Control Board, Water Control Board, Marine Resources Commission, the Environmental Protection Agency and the Army Corps of Engineers were utilized. Supporting documents pertaining to the consulting scientific agencies such as the Virginia Institute of Marine Science, National Marine

Fisheries Service, Fish and Wildlife Service were examined as needed. Important information was obtained from individuals and agencies associated with the refinery early in its development.

1.4 The proposal: Hampton Roads Energy Company

Since September 1974, a 623 acre industrial site in Portsmouth, Virginia has been the intended location for Hampton Roads Energy Company's (HREC) oil refinery and marine terminal.[14] On the west bank of the Elizabeth River directly across from the Lambert Point coal facilities of Norfolk, the site is south of the Craney Island disposal area, bounded on the west by Cedar Lane, and on the south by the Norfolk, Franklin and Danville Railway (Figure 1).[15] In immediate vicinity are the communities of Chesapeake, Suffolk, Hampton, Newport News, Norfolk and Virginia Beach representing 61% of the state's population.

On approximately 425 acres of the site the Delaware incorporated firm[16] plans to construct a 175,000 barrels per calendar day "topping" refinery capable of refining Mid-Eastern crude oil into a variety of refined petroleum products. Over 6.8 million gallons of gasoline, jet fuel, fuel oil, low sulfur residual fuel oil, propane and butane will be produced each day. Storage tanks for 12 million barrels of these petroproducts and crude oil will be built on the site.

Eastward from the refinery and projecting into the Elizabeth River, a multiple use marine terminal will allow for offload of crude oil and loading of refined products. As planned, the terminal will

Figure 1. Portsmouth Refinery Site, on the Elizabeth River.

accommodate two tankers and four barges. A variety of pipes will carry crude oil, refined products and wastes from the terminal to shore on a 1700 foot trestle-type pier. For ships to reach the pier, a 1300 foot access channel must be dredged to a depth of 45 feet from the Elizabeth River channel to the terminal. The 3.4 million cubic yards of dredge spoil will be deposited on the Craney Island disposal area to the north. In the immediate load-offload areas a floating oil spill containment system is to be constructed.[17] The terminal will be operated by Security Marine Terminal Company (SMT) a separate legal entity but identical in personnel, offices and location to HREC.

1.5 The Federal and State regulatory process

Prior to construction of the refinery and terminal, HREC and SMT must procure a number of preconstruction authorizations from the local, state and federal governments (Table 1). The approvals are significant for lacking any one of them would preclude building and the success of development. These are: local building permits and zoning variances, the air permit granted by the state Air Pollution Control Board (APCB) the discharge permit and construction and operation certificate granted by the state Water Control Board (WCB), the dredging permit granted by the Marine Resources Commission (MRC), the prevention of significant deterioration (PSD) permit granted by the Environmental Protection Agency (EPA), and the construction and dredging permit granted by the U.S. Army Corps of Engineers (Corps). The three state permits must be obtained prior to issuance of the Corps permit although processing may be concurrent.

TABLE 1. REQUIRED STATE AND FEDERAL APPROVALS

AGENCY	PERMIT	PURPOSE	DATE APPLIED	DATE RECEIVED	EXPIRATION
MARINE RESOURCES COMMISSION	SUBAQUEOUS PERMIT	STATE PERMIT FOR DREDGING FOR MARINE TERMINAL	11 MARCH 1975	28 OCT 1975	31 DEC 80*
WATER CONTROL BOARD	401 CERTIFICATE	FOR TERMINAL DREDGING AND DISCHARGE	9 MAY 1975	12 JAN 1976	AT TIME CORPS PERMIT EXPIRES
WATER CONTROL BOARD	402 NPDES PERMIT	DIRECT DISCHARGE OF PROCESS WATER TO ELIZABETH RIVER	19 OCT 1976	18 FEB 1977	18 FEB 1982
AIR POLLUTION CONTROL BOARD	NEW SOURCE EMISSION	CONSTRUCTION AND OPERATION OF NEW SOURCE AIR EMISSIONS	2 JUNE 1975	8 OCT 1977	7 OCT 1981**
ENVIRONMENTAL PROTECTION AGENCY	PSD I	PREVENTION OF SIGNIFICANT DETERIORATION	11 JUNE 1976	25 JULY 1977+	25 JAN 1979
	PSD II	PREVENTION OF SIGNIFICANT DETERIORATION	28 JUNE 1978++	21 JAN 1980	JULY 1981
ENVIRONMENTAL PROTECTION AGENCY	SIP REVISION	EMISSION OFFSET FOR HREC REFINERY NON-METHANE HYDROCARBON (NMHC) EMISSION	28 NOV 1977	31 JAN 1980	not applicable
ARMY CORPS OF ENGINEERS	404 PERMIT DREDGE CONSTRUCTION	CONSTRUCTION OF TERMINAL, DREDGE AND DISPOSAL	3 MARCH 1975	11 DEC 1979	DEC 1984

* EXTENDED 31 NOV 1978

** EXTENDED 3 OCT 1977, 7 OCT 1979

+ Suspended for review under Clean Air Act (1977), reaffirmed 7 Feb. 78, extended 25 Jan. 79, 19 Mar. 79, 25 July 79

++ New PSD rules necessitated filing second permit

The permit from MRC allows the applicant to encroach upon state owned submerged lands.[18] As the marine terminal requires substantial dredging and permanent construction of terminal and pier over the land, the permit is necessary. MRC granted the permit December 28, 1975 and extended it, at the request of the company, to October 1980 (Table 1).

The Water Control Board (WCB) administers two permits. The first, issued under § 401 of the Federal Water Pollution Control Act (FWPCA) assures that the construction and operation of the marine terminal with its associated dredging and dredge disposal is in compliance with state water quality standards defined by § 303 FWPCA.[19] The 401 certificate was granted January 12, 1976 (Table 1).

The board also certifies under § 402 of the FWPCA, the National Pollution Discharge Elimination System (NPDES), that the projected discharge of pollutants by the company in its effluent, meets or is less than the performance standards for new oil refineries.[20] The permit limits the quality and quantity of industrial wastewater discharge. The NPDES permit is a state permit functioning in lieu of a federal permit. The WCB granted the permit February 18, 1977.

The Clean Air Act (CAA) and its amendments require the certification of planned emissions from the refinery.[21] Analogous to the NPDES system, a permit is issued by the air board if the planned emissions from HREC meet the performance standards for new petroleum refineries set forth in the CAA regulations. The permit granted by

the APCB is reviewed by EPA with reference to the State Implementation Plan (SIP) which delineates the air pollution control strategy of the state.[22] EPA must approve SIP changes allowing for construction of the refinery. In the existent case, Virginia is a "non-attainment" (i.e. in violation of the National Ambient Air Quality Standards) area of ozone, a regulated photochemical oxidant.[23] The tradeoff or emission offset policy established by the CAA amendments in 1977, allows for replacement of an existing source of pollution by a new source of emissions in such an area.[24] EPA approved the emissions offset in January 1980 (Table 1).

EPA must grant a Prevention of Significant Deterioration (PSD) certificate to the company for two pollutants, total suspended particulates (TSP), and sulfur oxides (SO_x)[25] to ensure incremental allowances do not exceed National Ambient Air Quality Standards NAAQS. It must also approve an HREC-generated spill prevention control and countermeasure plan (SPCC).[26] The PSD permit was approved January 1980, but the SPCC has not yet been filed.

The U.S. Army Corps of Engineers must issue a permit pursuant to section 10 of the Rivers and Harbors Act of 1899 and section 404 of the Federal Water Pollution Control Act for HREC to dredge the necessary area for construction and operation of the marine terminal in the navigable Elizabeth River.[27] The dredged material will be piped to an upland disposal site. For the Corps to grant the permit, it must consider under the National Environmental Policy Act (NEPA) whether the action could have a direct and significant impact on the

environment.[28] Since this is obviously so an environmental impact is prepared and circulated as part of the application. The Corps, by virtue of its expertise in the case, is the lead federal agency responsible for coordination of the EIS. The EIS was the first time in the regulatory process the project was considered in entirety. The Corps permit was approved by the Secretary of the Army December 11, 1979.

To the U.S. Coast Guard, HREC must send a letter of intent to begin operations and an operations manual on the marine terminal.[29]

CHAPTER II

EARLY DEVELOPMENTS, 1969-1974

2.1 Introduction

The proposed refinery at Portsmouth has only been planned at that site since late 1974. From this date to the present, HREC has been enmeshed in a regulatory network involving federal and state agencies mentioned earlier. The idea however, predates 1974 by at least six years. Since some of the problems presently experienced by the company date from that time, it is enlightening to examine that earlier history.

The project originated with entrepreneur and promoter, John K. Evans. In June 1969, Evans approached Hampton lawyer Eldon James through a mutual Washington friend, with a request for at least 200 acres in Tidewater Virginia near a deepwater channel. On such a site he planned to build a "small business" refinery of 29,500 barrels per day (B/D) capacity capable of supplying local defense markets with aviation fuel.[1] For Mid-Atlantic Refinery Associates (MARA) to function economically, it would have to be established in a Foreign Trade Zone (FTZ)[2] to circumvent the Mandatory Oil Import Program (MOIP)[3] then in place. The idea had undoubtedly been considered by Evans even earlier, but this incident affords a convenient date to mark its inception. The undertaking was enormous and potentially very complex. Evans was to prove equal to the task for several reasons.

Not the least of these was experience. For the Portsmouth project was but one of five such proposals by John K. Evans. The other four were at Machiasport, Maine; Newport, Rhode Island; Savannah, Georgia, and Oahu, Hawaii. Only in Hawaii was he successful in building a refinery.[4] The Machiasport, Maine imbroglio was dropped after five years of intense local, state and federal politicking.[5]

Evans, long associated with Royal Dutch Shell, took an early retirement in 1961 to direct the Independent Fuel Oil Marketers Association (IFOMA). While at Shell he had accrued the marketing knowledge and worldwide contacts so vital to his proposal. His involvement with the Portsmouth proposal was as a promoter, finding a moneymaking scheme and developing it as far as necessary before selling.[6] By so doing, he divested himself of the administrative responsibilities while retaining a continuing share of the profits and control. The role cannot be underestimated for the greater his plans, the greater his profits.

As a promoter and astute businessman, he followed the unwritten rules of promotion as evidenced in his prolific correspondence: Move fast-delays prove expensive and give opposition a time to build; Utilize as few personal resources as possible; Identify friends and opponents of the project; Use friends to mute criticism of those unfriendly, Use imminent departure of the proposal to another area to hasten development; Maintain flexibility, modifying the proposal to take best advantage of new opportunities. At the same

time Evans exuded that aura of bluff positivism designed to sway the uncommitted and add impetus and credence to the project.[7]

2.2 Virginia Siting Alternatives

Four other sites were considered for the refinery in Tidewater Virginia (Figure 2). Shepherding the proposal along with Evans and lawyer James was the Tidewater Virginia Development Council (TVDC), a Norfolk-based industrial development group.[8] Until 1974, TVDC offices functioned as the de facto local office for the proposal.

The first site considered was the present site on the Elizabeth River. Owned by Norfolk and Western Railroad (NWRR), the 623 acres had the requisite space for expansion and access to deep water. Despite convincing arguments by Evans based on profit, national defense and public interest, the project was rejected by NWRR president, H.H. Pevlar in January 1970. NWRR saw little in the proposal for itself.[9] Since the products would move to area defense installations by pipeline, little rail traffic would be generated for NWRR. Additionally, oil would compete with coal, NWRR's largest business.

Virginia Beach was next considered. Primary sites near Rudee Inlet and Bayside Industrial Park were toured. (Figure 2, #2, 3) Oil would be pumped from a single point mooring system located near the Thimble Shoals Channel. After brief deliberation the sites were discarded for reasons of environmental safety and size. Evans could

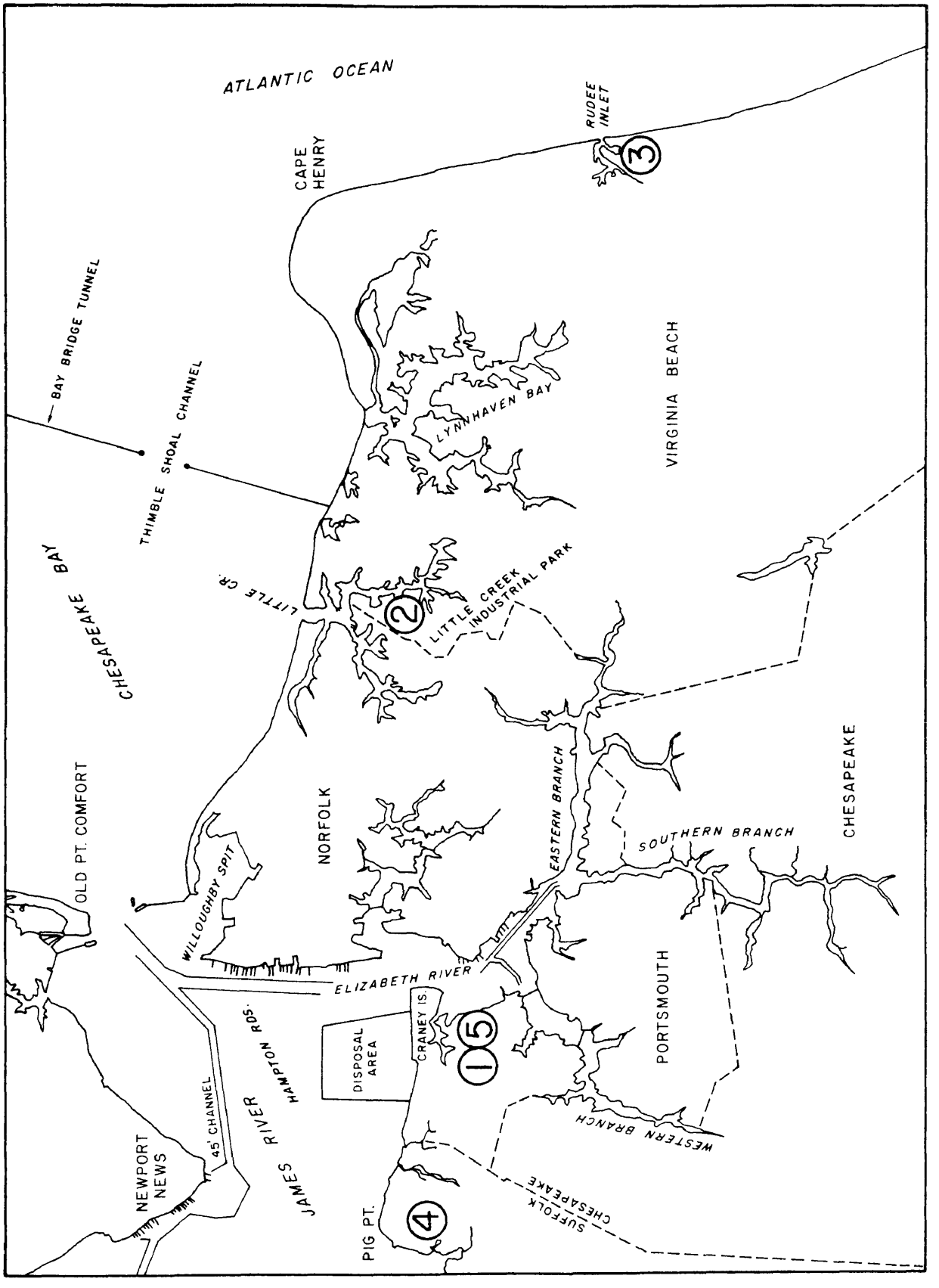

Figure 2. Virginia Siting Alternatives

only envision the adverse impact of oil spills on the beaches and economy of the resort city.

After rejection of the Virginia Beach sites, Nansemond County was next evaluated (Figure 2, #4). If sufficient acreage could be found and rights of way obtained, an overland pipeline from a terminal constructed on the Elizabeth River might connect with a refinery in Nansemond. The acreage proved to be available, but was not united. To accomplish this task, James and Evans enlisted the aid of two prominent local businessmen, Muscoe Garnett and George Cornell. Their responsiblity was to obtain land options from eight or nine landowners, to create a piece of land large enough for the refinery. To do so meant convincing the landowners, by means of persuasion and inflated purchase price, that selling was in their best interest.[10] Some way also had to be found to procure three parcels of public "poor lands" totalling 369 acres, held in trust by the county.[11]

Moving quietly but with alacrity, Garnett and Cornell secured options to over 60% of the needed land by mid-1970 and secured the rest by November of the same year (Figure 3). By Act of Assembly, the Commonwealth of Virginia approved the sale of the poor lands for the proposal in mid-1970. The majority of the residents did not realize fully the extent of development until James requested a zoning change from agricultural to heavy industrial (M-2) for the newly unified tract. Despite environmental criticism, Nansemond County officials approved the request in mid-November 1970.[12] The denouement of the

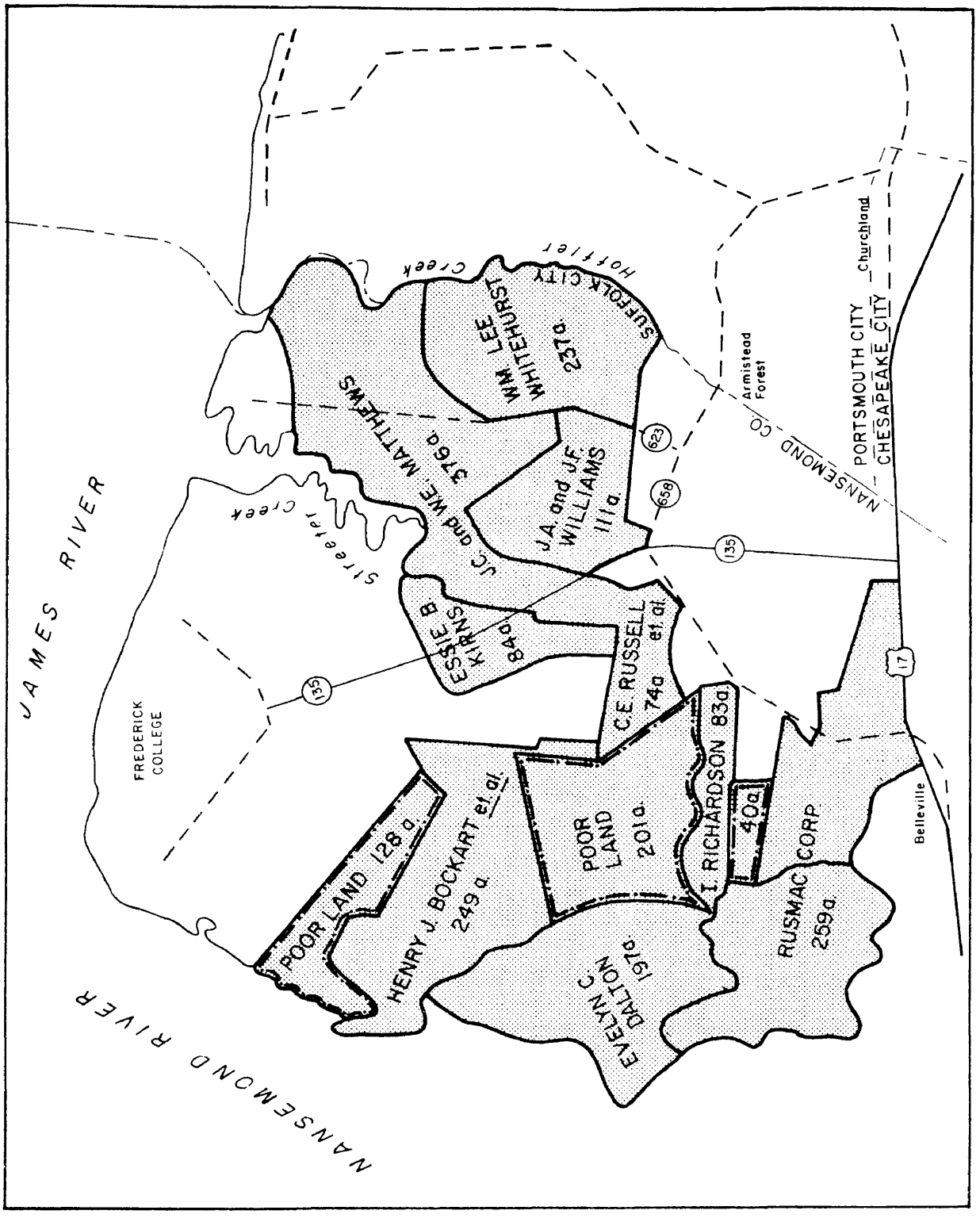

Figure 3. The Nansemond Refinery Site

2100 acre plot was achieved in June 1972 when Evans convinced Chicago Bridge and Iron (CB&I) to purchase the tract.[13]

Most interesting in the Nansemond proposal were the land arrangements between the County, Mid-Atlantic Clean Energy Center (MACEC) and CB&I. MACEC had the option of reacquiring lands from CB&I. The land in turn would be leased to the county, who would lease it back to MACEC. The complex arrangement would make best use of a loophole in the recently enacted Virginia Wetlands Act, since leases by political subdivisions were exempt from compliance with the statute.[14] As the Nansemond site contained extensive wetlands on the east and southwest the move was advantageous to the developer.

Evans and James in the meantime had been busy on the FTZ proposal.[15] As initially presented, the FTZ was to have been operated by the Virginia Ports Authority. Later the plan was changed and a wholly owned subsidiary of TVDC, Tidewater International Trade Corporation (TITC), chartered for the same purpose. The application however, would be submitted by Nansemond County. Considerable time and expense was expended in its preparation. The proposal was hand carried amidst much local fanfare to Washington, D.C. in November 1972 by a delegation from Nansemond.[16]

2.3 Marine Terminal Alternatives

The promoter was not as fortunate obtaining rights of way for a pipeline to the refinery. Seven routes and locations were pursued for the siting of a marine terminal (Figure 4). Initially the terminal

was planned just south of Craney Island Creek, adjacent to a proposed Coast Guard base (Figure 4, A). The site was denied by the Coast Guard when it was apparent the MACEC pier would extend into the dredged channel to be utilized by the Coast Guard.

Next the feasibility of a terminal on the eastern edge of the Craney Island Disposal Area was investigated. The pipeline would follow a VEPCO right of way through the U.S. Naval Fuel Depot to Cedar Lane, south on Cedar Lane to a VEPCO substation, and then west along an abandoned railroad right of way through several private plots to the refinery site on the eastern side of the Nansemond plot (Figure 4, B). An alternate route for the pipeline on the tidal flats was considered and quickly discarded.[17]

Needed for this route was the approval of Governor Holton.[18] When asked by James to interpose no objection to the plans, Holton demurred. Following the recommendation of agency heads, Holton replied that the Commonwealth would be "...derelict in [its] responsibility to the people of Virginia in granting your request."[19]

TVDC investigated the next possibility on the northern shore of Craney Island Creek. The terminal would be built close to the piers of the Naval Supply Center at Craney Island (Figure 4, C). The pipeline would run westward in an easement parallel to a road on the southern extremity of the Naval Base. The route would require the approval of the U.S. Navy. Despite formidable pressure from Washington engineered by Evans, the request was denied in May 1971.

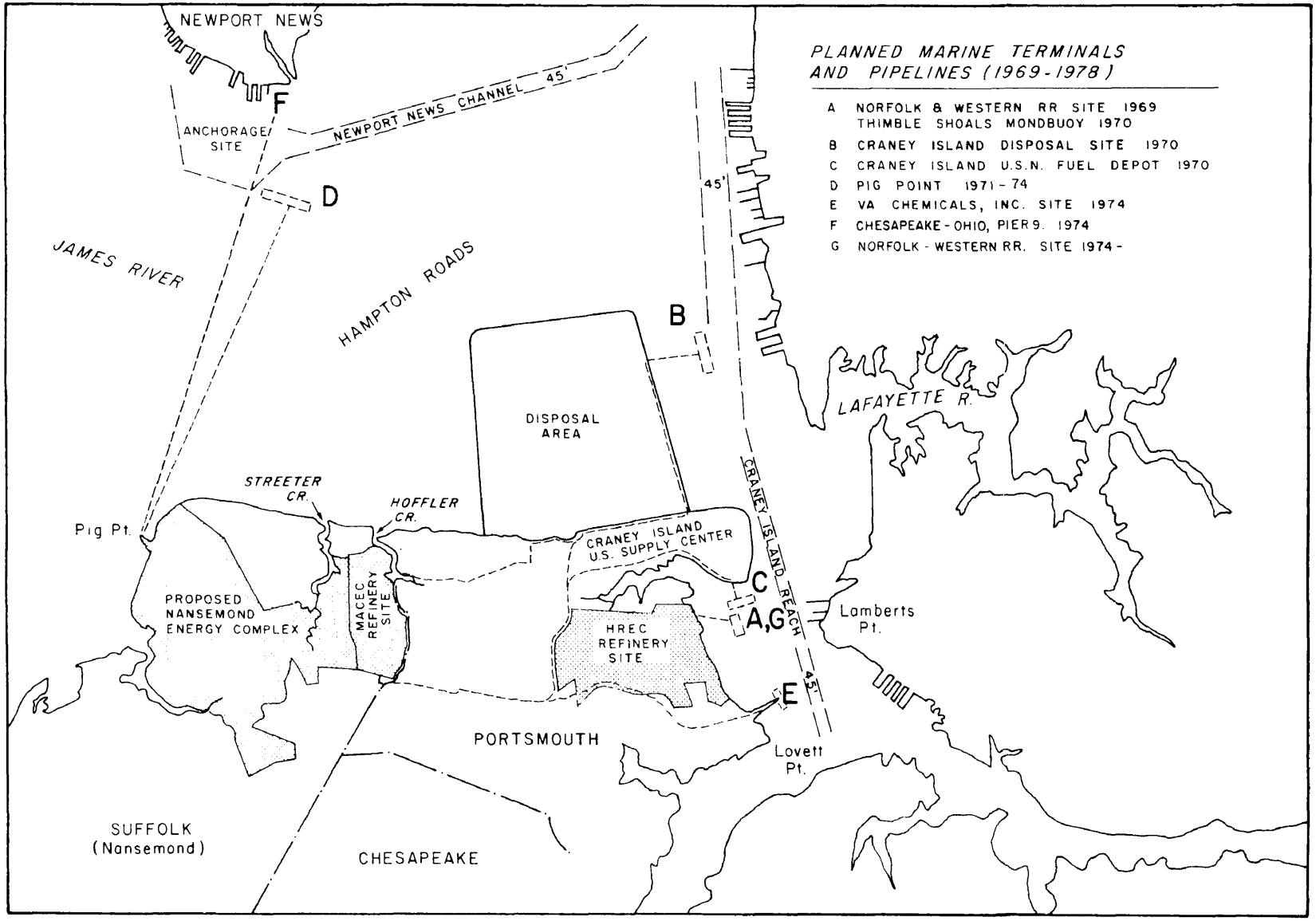

Figure 4. Marine Terminal Alternatives

The potential for interference was too great the Navy said. The Naval base and the terminal were incompatible.[20]

Faced with this disapproval TVDC went back to Governor Holton for another attempt at the Craney Island site. The opinion of the Governor remained unchanged despite additional information provided by the promoter.[21] Three other alternatives existed, however. In conjunction with a newly dredged anchorage area south of Newport News, (Figure 4, #D) a marine terminal was planned. The pipeline ran from the terminal back to Pig Point on the western side of the Nansemond plot.[22] If this proved unsuccessful the Chesapeake and Ohio coal pier in Newport News might be purchased (Figure 4, #F). After subsequent modification the pier would serve for the offload of crude oil. The pipeline route from C&O's pier 9 was identical to the James River terminal. The third alternative was a joint pier with Virginia Chemicals, Inc., just off their West Norfolk plant on the Elizabeth River. (Figure 4, #E). This had the advantage of shared construction costs and a previously explored right-of-way from the VEPCO substation to Nansemond. For a number of reasons none of these alternatives reached fruition.

The C&O pier was dropped in early 1974 when an agreement could not be reached by the railroad and the refinery. The James River marine terminal was also considered undesirable by the Corps of Engineeers in early 1974.[23] Evans privately stated the fate of the refinery seemed to rest at that moment on finding an unloading solution in the Elizabeth River where "the Corps much desired it".[24]

This left the Virginia Chemicals, Inc. site just south of Lake Kingman in West Norfolk. Although the pipeline route had been surveyed, the problems obtaining rights of way from private landowners, effectively blocked any progress. It is not surprising, then, that having no alternatives left to bring oil to the Nansemond refinery, the promoter switched to the Elizabeth River site when the opportunity presented itself.

Transco Energy Company, a Houston, Texas-based gas transmission firm had jointly planned with Continental Oil Co. (Conoco) for a large oil gasification project on the 623 acre NWRR site since April 1973.[25] When the rapidly escalating price of oil made the project undesirable, Conoco dropped the idea and shortly after, Transco withdrew. Transco would have allowed its option on the property to expire on September 30, 1974 had not Cox Enterprises, Inc. purchased the option. The Cox firm had announced in April 1974 that the HREC refinery complex was under preliminary consideration for financial backing.[26] It exercised the option on the land shortly after in October 1974, purchasing all 623 acres. When Cox made this commitment, the financial concerns of Evans were over. On December 13th Evans and Garner Anthony of Cox Industries jointly announced the project would move in entirety to the Portsmouth site. The announcement was received enthusiastically by Portsmouth officials. After four years HREC had a viable site since the marine terminal could easily be built off the property (Figure 4, #G). Accompanying the move, HREC released a statement that the move was made because of the "objections of environmentalists

in Newport News" and the Corps disapproval of the Hampton Roads marine terminal.[27] This statement can only be viewed in light of what is known above. The move was made because HREC had exhausted its marine terminal and right-of-way alternatives.

2.4 Development Changes

It should not be assumed that the plans for the refinery remained the same throughout this period. Those plans metamorphosed several times to reflect the larger land area that became available (Table 2). Although originally proposed as a single, small business refinery, the plant proliferated as the promoter gradually realized the full potential of the Nansemond site. The expansion was also as much a product of ongoing discussions with industries seeking to locate in the FTZ. Throughout the period from 1970 to 1973 numerous petroleum, petrochemical and agricultural firms consulted with Evans.[28] Publicly Evans compared the merits of Nansemond with similar developments in Puerto Rico. There, an initial investment of 40 million had expanded to a 2 billion refinery-petrochemical complex employing over 5,000 workers. As had happened in Puerto Rico, a number of satellite industries would be associated with the Virginia refinery. The net result of such discussion was that substantial uncertainty was interjected into Tidewater Virginia, for a concrete proposal was not offered for public scrutiny.[29] It was not advantageous to Evans to release information too quickly when other more attractive offerings might be in the offing.[30] The full range of possibilities had not yet been explored. As viewed by the public and

TABLE 2. CHANGES IN DEVELOPMENT

DATE	DEVELOPMENT	START	FINISH	COST (MILLIONS $)
July 1969	30,000 b/d small business refinery	-	-	30
30 July 1971	30,000 b/d small business refinery 100,000 b/d desulfurization and gasification refinery 3 oil refineries of undetermined size 100,000 b/d domestic refinery 2 petrochemical plants			600-2000
20 Nov. 1971	30,000 b/d small business refinery 100,000 b/d desulfurization refinery 100,000 b/d oil gasification plant 100,000 b/d domestic refinery	late 1972	1974	320
20 Nov. 1972	1 marine terminal 180,000 b/d domestic refinery 1 oil gasification plant			
2 April 1973	same			215*
24 April 1974	1 marine terminal 180,000 b/d domestic refinery	early 1975	late 1977	200
27 Sept. 1974	1 marine terminal 175,000 b/d domestic refinery	early 1975	early 1978	350
3 Jan. 1975	same	before Oct. 1975	late 1978	same
1 Nov. 1975	same	May 1976	late 1978	same
1 April 1976	same	Dec 1976	early 1979	same
29 May 1976	same	Jan 1977	late 1979	350-400
4 Nov. 1976	same	-	-	550
31 Mar. 1977	same	1977	-	same
3 Dec. 1978	same	-	-	650
20 Mar. 1980	same	Spring 1980	-	850

* total multicompany package to exceed $450 million

environmentalists however, this reticence was more coverup than economic strategy.[31] A substantial amount of ill will accumulated, which although not significant at the time, was to cause significant delay during the permitting processes.

2.5 Early application: the Council on the Environment

Refinery proponents began application for several state and federal permits during 1970-1974. These efforts are discussed in the following chapters. They all proved unsuccessful largely because the refinery plans were not yet complete. Evans had not identified "even the most elementary details to the public."[32] In March, 1974, HREC announced its intention to use the state's proposed coordinated permit process headed by the newly formed Council on the Environment (COE). In theory, the Virginia Environmental Quality Act was to consolidate various procedures of the Air Pollution Control Board (APCB), the Water Control Board (WCB) and the Marine Resources Commission (MRC).[33] The result was to produce less administrative overlap and paperwork, a comprehensive review of major projects and quicker decisions. The refinery review was promised as "the most complete and thorough disclosure of such a project the public has ever had".[34]

When COE drafted a proposed set of guidelines and circulated them for comment however, the shortcomings of the process became evident.[35] The process would not streamline, it would lengthen, and as proposed could never realize the gains envisioned. The limitations of the act and its agency had not been recognized. The COE was impotent despite

its mandate. By independent means, HREC concluded the same and prudently withdrew from the coordinated permit process in September 1974.[36] They would file separately, thereby taking the established, more secure route. The COE would not participate in the permit processing until much later, coordinating agency responses to the Environmental Impact Statements.

2.6 Local approvals

The first minor hurdle to be cleared by HREC was approval of a zoning varience by Portsmouth. Early in January 1975, the Portsmouth Planning Commission recommended to City Council that petroleum refining be included in the city's M-2 heavy industrial category. By unanimous vote in late February, City Council passed the zoning change, permitting the oil refinery in the area. Later in March, Portsmouth affirmed its support to issue building permits. The permits would be issued for the refinery when required approvals and permits from state and federal agencies had been received when the plans and specifications had been certified by registered professional engineer.

CHAPTER III

THE MARINE RESOURCES COMMISSION (MRC)

3.1 Introduction

Only one permit was needed from the MRC, the submerged lands use permit, to allow construction of the marine terminal and dredging of a specified amount of river bottom adjacent to it. The process and authority are the easiest of all to understand. From common law the state claims title to all submerged lands in the Commonwealth not subject to special grant or conveyance,[1] from the mean low water datum seaward to the 3 mile limit of the territorial sea.[2] The authority of the MRC, as pertains to submerged lands, is narrowly delimited to certain activities. Encroachment or trespass on the lands, building, or dredge and fill activities, are prohibited unless accompanied by a permit from the Commission.[3] During the course of its permit deliberation MRC is guided by, and must balance, a number of factors explicitly stated in the code.[4] In addition to protection of submerged lands the MRC is required to protect the marine and fisheries resources of the Commonwealth. Therefore an application is evaluated relative to its impact on these resources. If "a permit decision relates to or affects the particular concerns or activities of state agencies," MRC must seek guidance from them.[5] Significantly no statutory procedures or time limit exist for the processing of the submerged lands permit, however, the MRC staff "...endeavors to process applications...as expeditiously as possible, generally within 60 days."[6] The permit is entirely state controlled, although it is

coordinated with the federal dredge and fill program (§404 FWPCA) administered by the Corps of Engineers.

3.2 Chronological perspective

MRC has been involved with the HREC since the proposal was sited in Nansemond County. As early as June 1970 TVDC, on behalf of the company, queried the Commission for permit applications and information on dredging and filling regulations (Appendix 1).[7] In August 1971 Eldon James met with Commissioner J. Douglas when the marine terminal in Hampton Roads was being considered. At issue was the right-of-way from Pig Point to the Newport News channel, and the public and private oyster rocks in between (Figure 4).[8] Between 1970 and 1974 the commission participated in numerous meetings between the company and other state agencies, largely to establish a mechanism for close coordination of state agencies (Appendix 1). The majority of these were prelude to the passage of the Virginia Environmental Quality Act (VEQA) in 1973, and the highly touted coordinated permit process offered by the VEQA. As mentioned earlier, little became of the process for the company elected to pursue separate permits from the respective environmental agencies.

In May 1974 HREC returned to MRC with detailed plans for the joint HREC - Virginia Chemicals terminal in the Elizabeth River (Figure 4, E). Made chary by earlier failures, the company sought unofficial verbal approval before committing its resources. MRC had

no preliminary objections to the site. The proposal was under consideration until nullified by the move to Portsmouth.

Throughout the entire month of March 1975, HREC worked on completing an application with the Commission for the Elizabeth River terminal. On March 1, 1975 HREC filed a preliminary application. Subsequently voided for lack of information, the permit was resubmitted March 5th. Several days later MRC sought information concerning adjacent property owners and the requirements necessary to comply with the State Health Department regulations. When HREC complied the Commission accepted the permit as complete on March 11th. MRC also inquired about more environmental information which it was told was forthcoming.[9] At the end of March Mr. Evans requested the application be revised and redated March 31.[10] A revised application was received finally on April 17th. After staff research, public notice was published in area newspapers on May 28. Written comments or inquiries were to be made to MRC by June 20th.

In addition to these comments the MRC staff received two copies of the Environmental Impact Assessment provided to the Corps of Engineers by HREC. Although these documents contained extensive environmental information, the material was for the most part undigested by other agencies, and had not been subject to public scrutiny. Throughout 1975 the Commission received from the Corps, copies of comments from federal environmental agencies; NMFS, EPA and FWS. The majority of these comments concerned the completeness of the Draft Environmental Impact Statement, not an agency critique or

position. In September MRC received from VIMS their advisory opinion and shortly after conducted public hearings in Newport News on the proposal.[11]

At the hearings MRC staff recommended approval of the refinery dredging permit since their evaluation showed the potential damage to marine life was minimal. By decision of Commissioner James Douglas, the staff limited its consideration to the marine terminal exclusive of the refinery. It would consider the construction, dredging, and potential spill impacts of terminal. A motion to grant the permit was tabled as premature. HREC was requested to address more fully some of the areas questioned in the VIMS report. Additional information was also requested from VIMS by MRC.[12] Also certain details of the permit had not yet been resolved. Specifically, royalties for dredging, a timetable and provision of an oil spill containment plan had not been formulated.

By the 28th of October, however, these issues were settled and the commission voted 4-3 to grant the permit.[13] At that meeting the Commission discussed and voted upon 6 findings before considering the permit. One of the 6 rejected by the Commission would prove important to a later court test of the permit.[14] That test came one month after permit issuance, on November 26, 1975. Representatives of Tidewater Refineries Opposition Fund (TROF) filed notice in the Newport News Circuit Court to appeal the MRC decision.[15] In a brief to the court, TROF labeled the MRC decision arbitrary based on the commission's rejection of finding #3, that the refinery would have no adverse

impact. Rejection of that finding implied to TROF that MRC expected adverse impacts. Furthermore TROF contended MRC had insufficient information before it made the decision and a number of questions were unanswered.[16] MRC should also have considered the effects of the refinery. Six months later in June 1976, Newport News Circuit Court judge Henry D. Garnett declined to void the decision of MRC, thereby affirming the permit.[17]

Following this litigation MRC was involved with the proposal only by comment to the Council on the Environment on the FEIS. In December 1977 MRC reiterated its October 1975 position: the terminal portion of the project as proposed did not present a significant risk to the marine environment.[18] In November 1978 however, MRC Commissioner Douglas termed, in a final personal comment on the FEIS, the refinery "wholly incompatible" with the marine environment.[19] The opinion did not effect MRC renewal of HREC's subaqueous permit in November 1978, when the permit was extended to December 31, 1980.[20]

3.3 Discussion

The Commission considered only that portion of the proposal that it had the authority to consider: the marine terminal. Its mandate was not broad enough to consider the refinery impacts on the marine resources of the area, since the refinery was to be built on adjacent highlands. It does not have the authority to approve or disapprove wastewater discharge or the effect of such discharge on marine fisheries. That power resides with the WCB and is examined later

on.[21] To the extent that it mitigated the impacts of the dredging on fisheries, MRC incorporated VIMS suggestions that the dredging be restricted to certain months and that a spill prevention system be employed about the terminal. Fisheries were but one of several factors used by the Commission in its decisions. The agency's approach and actions were upheld in court.

No statutory time limits exist for the processing of submerged lands permits. The permit application was first submitted 1 March 1975 and granted 28 October 1975, nearly 8 months later. This includes the time spent revising earlier applications from 1 March to 17 April or 1.5 months. The time of processing is considerably longer than the norm, but justified by the complexity of the proposal. The Commission could easily have taken longer, until more definitive environmental information was available, thereby heeding the advice of VIMS, but it is doubtful whether the decision would have differed. What was at issue was construction and dredging no different from numerous other piers and terminals in Hampton Roads.[22]

Broadly reviewing the documentation following the permit decision, there seems to be a difference in actual and perceived authority of the Commission by the public: the MRC was supposed to protect the marine resources of the Commonwealth and did not. This produced some confusion and disbelief, priming critics for future opposition. Several other events abetted this attitude. An apparent change in opinion by the Commission occurred from 1975 through 1977 to 1978. The MRC earlier maintained the terminal would have minimal

effect on the Elizabeth River. On that assumption they granted a permit. One of the findings rejected was that the refinery would have little or no effect on the marine resources of the area. The implication was some negative impacts would ensue. Commissioner Douglas's personal opinion in 1978 panned the refinery and its siting. Viewed from without by an ill informed public, the two opinions seem incongruous.

In late July Governor Godwin failed to reappoint 3 of the 4 members opposed to the refinery. Those that were replaced were ardent conservationists.[23] Those that were newly appointed were businessmen. Though Godwin publicly denied the two actions were related, the association seemed clear that he did not "...share his predecessor's apparent belief that spirited conservationists were appropriate on environmental protection boards."[24] Implicit was a diminution of MRC effectiveness, the loss of worthy criticism in the permit process.

CHAPTER IV

STATE WATER CONTROL BOARD (SWCB)

4.1 Introduction

Hampton Roads Energy Company's involvement in water related matters has been with the WCB and secondarily with the Environmental Protection Agency (EPA). These two agencies are the primary regulatory and policy setting entities on water quality for state and federal government, respectively, and are related by several administrative processes. The WCB derives substantial authority from the State Water Control Law[1] passed in 1946, almost two decades before seminal federal legislation on the same topic. Under state law the WCB establishes water quality standards[2] and issues certificates for the discharge of industrial wastes.[3] In addition, the responsibility for several permit programs has been delegated to the WCB by the EPA.[4] The agency closely monitors state performance on two programs for Water Quality Assurance[5] and National Pollution Discharge Elimination[6] under title IV of the Federal Water Pollution Control Act (FWPCA).[7]

By authority of the FWPCA the EPA must establish guidelines and regulations to implement the Congressional aims of "fishable-swimmable" waters and zero industrial discharge by 1985.[8] Title III of the Act sets forth the standards, inspection and enforcement requirements for the EPA. The principal thrust of the section is the technology-based effluent limitations. Included are federal effluent standards[9], new source performance standards,[10] and

pretreatment effluent standards.[11] State implementation plans[12] for water pollution control must be approved by the EPA, and state water quality standards[13] coordinated with the federal effluent limitations.[14] Enforcement provisions are contained in Title IV as section 401 and 402 permits mentioned above.

The Federal government has played a leading role in formulating the Commonwealth's water control policy concerning the abatement of existing water pollution. Changes in state water pollution law have been motivated by changes in federal environmental law. From 1969 to 1977, significant changes occurred in federal law, most however, prior to application by HREC for its discharge permits. Therefore the regulatory process had been well established when the company applied for its first "no-discharge" permit in 1974. When the company changed its plan and applied for a direct discharge permit, the NPDES transferral had already taken place and the 401 certificate was being issued by the state. The first federal effluent limitations had been set for petroleum refineries,[15] as had the standards of performance for new sources.[16] That the procedural changes had occurred does not imply elimination of confusion, however. The Federal-state roles were relatively new and inevitable uncertainty ensued.

4.2 State Water Law

The present State Water Law was enacted in 1946 following an advisory report in 1945 on the alarming growth of pollution and its detrimental effects.[17] The law declares its purpose with respect to

water quality as; the protection of high quality waters from pollution, "...to permit reasonable public use and the propagation and growth of all aquatic life, including game fish," restoration and preservation of waters of diminished quality, and reduction of existing pollution, to ensure public health, safety and welfare.[18] The Act explicitly includes discharges such as those emanating from an industrial facility like a refinery.[19] On the surface the Act was forceful and comprehensive, vesting in the WCB authority to administer, supervise and enforce the provisions of the act. Its effectiveness, however, was limited in several ways. The relative position of SWCL among other laws produced overlapping jurisdiction over water quality. A number of agencies producing water policy greatly diluted the utility of the WCB.[20] The situation was not remedied until 1972 when the General Assembly transferred all policy-making authority to the WCB.[21] Pervading the entire act was the cautious attitude of the state, not desirous of overbearing action. Industrial pollution should be controlled only where reasonable.

The Act contained the industrial certification process of the state. The certificate was little more than a registration of a discharge with the state WCB, and allowed all owners to continue existing pollution. The WCB required periodic reduction in pollution and accompanying progress reports. From 1946 to 1970 operating policy of the WCB permitted all owners to obtain certificates to continue existing pollution. A new direction was followed in 1970 when

dischargers unable to meet the conditions of their permits were required to provide new facilities within reasonable time to meet such requirements.[22] The Act was amended significantly in 1968 and 1970 in response to new action forcing federal legislation.

By passage of the Water Quality Act of 1965,[23] Congress forced higher water quality standards upon Virginia, requiring elimination of all pollution in interstate waters where technically feasible. The state was to adopt satisfactory water quality standards and implement a plan for doing so by late June 1967.[24] Draft standards and implementation plans of the WCB received partial approval by the Federal Water Pollution Control Agency in 1969. In November of the same year, faced with imposition of federal standards by the Secretary of Interior, the WCB adopted the changes suggested by the agency in 1970.[25] The Water Quality Standards set a point of reasonableness for pollutants, beyond which degradation theoretically could not occur.

Other revisions provided the WCB with sole authority to approve or disapprove waste water discharges to the waters of the Commonwealth. All facilities for the treatment and control of industrial wastes[26] and all sewage treatment plants, must be approved by the board.[27] Deliberation on the certificates is to take no longer than 120 days. Even if wastes are not to be discharged, the Board has to review and approve the storage and handling facilities for such wastes.[28] The "no-discharge" permit includes handling, storage, distribution and production of industrial wastes.

The state also has a powerful procedure for alteration or veto of any proposal presented to a federal agency, that might result in waste discharge. An applicant for federal license or permit with these potential effects must provide the licensing agency with a certification from the WCB, that the discharge would comply with application state quality standards.[29] The permit is important for a federal agency is prohibited from issuing its license, absent state certification. An applicant to the Corps for a dredging permit therefore, must obtain state certification. The "401 certificate" as it is known, was derived from earlier legislation[30] and continued under section 401 of the FWPCA.[31]

4.3 The Federal Water Pollution Control Law

By far the most dominant federal water pollution control legislation, has been the FWPCA of 1972.[32] Significantly amended in 1977,[33] the Act coalesces earlier legislation on water quality standards[34] and effluent limitations[35] to form a statute whose primary thrust is the improvement of national waters. It is extraordinarily complex and far reaching in its impact and importance on potential industry. The breadth of required compliance is vast, and often confusing. Indeed the statute has been soundly criticized as "...poorly drafted and astonishingly imprecise."[36]

Title III of the Act delineates the various mandatory standards to be followed by an industrial applicant and flatly prohibits any discharge except in compliance with the provisions of the act.[37]

Federal effluent limitations follow closely a timetable mandated in section 301. By 1 April 1979 point sources other than publicly owned treatment works (POTW) must apply best practicable control technology (BPCT) currently available, as determined by the EPA, to effluent discharges. Further reductions are mandated by 1 July 1984. By that time the best available control technology (BACT) economically achievable which will result in reasonable progress toward total discharge elimination, will be required.[38] A number of industrial categories have been defined by the EPA and discharge standards set. As petroleum refineries are one of the 21 regulated industries category, BPCT and the more stringent BACT guidelines have been promulgated.[39]

Other standards directly apply to the construction of new point sources, generally achieving a midpoint between BACT and BPCT.[40] The standards of performance control the quantity and quality of effluent from operations, reflecting size, water runoff and ballast water processing. The Act also establishes pretreatment standards for sources which discharge or plan to discharge wastes to publicly owned treatment works (POTW), and would be considered new sources if they directly discharged to navigable waters.[41] Incompatible wastes as defined by the regulations must meet new source performance standards mentioned above. Distinction is made between pollutants with the potential for disabling a publicly owned treatment system and compatible pollutants,[42] with different handling requirements for each. Other regulations cover intake structures projecting into a

river, which must conform to a predetermined design to minimize adverse environmental impact. All standards are linked to the 402 permit system in that permits may only be issued for the discharge of effluents meeting the standards.[43]

State water quality standards and state implementation plans are also covered in the Act.[44] States establishing ambient water quality criteria prior to FWPCA passage in October 1972 may continue those criteria. To assure consistency with the Act, EPA must approve the state criteria and may suggest adjustment as necessary. States additionally are to identify waters where BPCT is not sufficient to achieve water quality sandards.[45] The state must provide priority ranking for those waters based on severity of pollution and the uses of such water. Total Maximum Daily Loads (TMDL) for pollutants must be set at a level necessary to achieve the standards. TMDL applies both to thermal and pollutant discharges.[46]

A states permit program may function under Title IV instead of the federal process, but eight specific elements must be encompassed. The complexity of the program is evident for included are effluent limitations and compliance dates, area wide waste treatment plans, TMDL for applicable waters, revision procedures, intergovernmental cooperation clauses, implementation procedures and compliance schedules for new standards, controls over residual wastes and inventory and ranking of needed publicly owned treatment works. The process must be reviewed and updated annually, reflecting changes in current state and areawide water quality management plans.[47]

Enforcement of the standards set above occurs by the issuance of permits by authority of Title IV of the Act.[48] The Water Quality Assurance Certificate must preface all requests for other federal permits to work in navigable waters. Therefore, prior to issuance of a 404 dredge and fill permit, a 401 permit is required. The permit provides for state scrutiny of federal permits and licenses in addition to environmental impact statement review.[49] The WCB must act on the permit in 1 year, otherwise it forfeits the right of comment.[50]

The responsibility for the National Pollution Discharge Elimination System permit was passed to the Commonwealth in March 1975 by the EPA after 16 months of negotiation.[51] Prior to that time permits were issued on a joint basis by the state and federal government. The state's certification of waste water discharges was utilized with minor changes as the NPDES system. A number of important provisions were included in the NPDES procedure as required by law. The state must follow public notice and hearing procedures prior to any permit action. The NPDES permit is issued for a 5 year time period only. Compliance with the terms of the permit assures compliance with effluent standards. Discharge monitoring however, is the responsibility of the industry, to be reported monthly to the WCB. Although the program is the responsibility of the WCB, the EPA retains substantial control over the program. Copies of virtually all NPDES notices, applications or forms for draft and final action are forwarded to EPA where changes may be requested or advised. EPA may even veto the action but in any event must comment on the application

within 30 days. The District office of the Corps also is notified of the proposal, to evaluate the impact of the proposed discharge on anchorage and navigation.[52]

4.4 Chronological perspective

The WCB had been cognizant of the HREC proposal since the earliest months of its development. It was included in informal meetings with the company and the governor, and attended the various public forums from 1970-1974 (Appendix I, II). Requests from the company for information on the State Water Control Law, date back to 1970. The WCB staff closely followed the progress of the company as it underwent its numerous early modifications. It was not until 1974 however, when preliminary plans for the refinery were complete, and the enviromental impact assessment initiated, that the WCB became involved. From 1974 to 1978 the WCB directly resolved four permit related issues and reviewed the draft and final environmental impact statements compiled by the Corps of Engineers. The four issues and times of consideration are:

March 1974 - December 1974 No discharge certificate

March 1975 - June 1976 401 Certificate of Assurance

October 1976 - February 1977 402 NPDES permit

April 1975 - December 1977 EIS review

October 1977 - September 1978 Groundwater permit

In addition, the board was defendant in two separate court cases during 1977 and 1978 in the state [53] and federal courts.[54] Both cases tested the legality of the permits issued by the Board.

4.4.1 No discharge certificate

As initially conceived, the refinery was designed not to discharge wastes to state waters. Process waters were to be reused in a closed loop system, utilizing a brine wastewater treatment system. The greatest problem with the system would be disposal of dissolved salts naturally occurring in crude oil and transferred to the process water. Salt-free waters could be produced by evaporation and the salt solids disposed by a number of alternatives. On this design HREC initiated an application for a "no-discharge permit."[55] The company submitted a draft application in early August which was retained for additional information.[56] The application was again submitted in September with a letter from EPA indicating no NPDES permit would be required. After staff review the WCB still had unresolved questions about the permit. Of greatest concern was the disposal of insoluble or solid salts.[57] Several alternatives were considered and discarded by the company. Deep well injection to a salt aquifer would require an NPDES permit and much time. Barging the wastes to sea for dumping was precluded by EPA since no new source ocean dumping permits[58] were being issued. Landfill of the salts was prohibited by the WCB as affecting local water tables. The issue was resolved at a meeting December 10, 1974 when HREC notified the board of the site change to Portsmouth. Included in the change was a wastewater discharge to a

proposed municipal sewage treatment plant in Nansemond, and utilization of the treatment plant effluent for makeup water. HREC would not have to apply for a direct discharge permit, although the sewage treatment plant at Nansemond would. The refinery would have to comply with pretreatment standards mentioned earlier. By letter on December 11, 1974 HREC withdrew its no-discharge application.

4.4.2 401 permit and EIS review

The issue of a NPDES permit did not surface until another application was submitted on October 19, 1976. Between December 1974 and October 1976, the WCB processed the § 401 application and commented on the EIS. HREC applied to the WCB on March 31, 1975, for a 401 certificate for dredging and dredge disposal in construction of the marine terminal.[59] The action was initiated by application to the Corps of Engineers for a dredge and fill permit pursuant to § 404 of the FWPCA. WCB review disclosed several deficiencies which were included in a revised application filed May 9, 1975. A request for more detailed environmental information by the Board prompted the receipt of several copies of the environmental impact assessment (EIA), newly completed by the NUS Corporation for HREC. Comments in the EIA were sent from the Regional Office to Richmond in early August, and forwarded to HREC with requests for additional information. WCB staff comments on the Preliminary Final Environmental Impact Statement (PFEIS) to the COE recognized the project had the potential for "...damage to the estuarine resources of the James River, Hampton Roads area and to a lesser degree the

Chesapeake Bay" but recognized the technology existed to permit operation without significant hazards to those resources.[60] In late October 1975 the WCB completed the review process. The Board did not consider the refinery's effluent as that was not an issue of the 401 permit. The draft 401 certificate was revised October 30, 1975 and November 7 and completed January 8, 1976. Attached to the permit were 15 conditions requiring oil spill controls in the terminal vicinity. The permit was advertised in four area newspapers as required and a decision made to forego a public hearing lacking controversy.[61]

The action was not entirely without criticism, however. By special request, a representative from Virginia Oyster Packers and Planters Association (VOPPA) appeared before the board to voice objection: the refinery could have substantial impact on the areas seafood industry. The board however, issued the certificate four days later on January 12, 1976, almost 9.5 months after application. The permit was reaffirmed in late June after a "protracted, sometimes acrimonious debate" over the objections of area environmentalists.[62]

The opposition of environmentalists, negative scientific reports,[63] and delays in the construction of the Nansemond sewage treatment plant caused HREC to abandon the Nansemond site as a waste receptor in early 1976.[64] HREC opted to build its own water treatment plant and directly discharge to the Elizabeth River at that time and obtain an NPDES permit. The move was in part to mollify environmentalists and the seafood industry, fearful of the discharge impact upon the James River seed oyster beds.[65] Moreover

correspondence in late March 1976 indicated a change in WCB stance on the Nansemond plant. The staff now considered the correct approach to separately consider the treatment plant at Nansemond and the refinery. The same memorandum showed considerable uncertainty over the NPDES procedure, WCB procedure and policy, and what would be required of the company.[66] The most significant affirmation was this, whether HREC elected to directly or indirectly discharge, the WCB had the authority to control either.[67]

4.4.3 NPDES permit

On October 19, 1976, HREC filed an NPDES application with the board for direct discharge of wastewater from a proposed treatment plant operated by the firm.[68] An agency task force was convened to begin work on the application, and public notice on the NPDES permit issued in area newspapers November 5, 1976. By mid-November the task force had prepared an initial draft permit and fact sheet. Public hearing was held in Portsmouth on December 9th, at which time testimony was presented by both the EPA and the WCB. According to the EPA the proposed effluent limitations in the HREC permit were more stringent than the EPA New Source guidelines for such refineries and were more stringent than those found in comparable refineries in the country. The WCB gave assurance that the discharge was in conformance with the Lower James River Basin Comprehensive Water Quality Management Plan. Also the specific chemical, physical and bacteriological characteristics of the state water quality standards would be met. The Board announced at the public hearing that comments

would be accepted until January 4, 1977, and received an number of exhibits, most addressing the issue of potential oil spills related to the refinery's operation. In response to these comments the board analyzed the oil spill potential and queried the Attorney General's office on the subject. Three days after public testimony closed, counsel to the Board submitted an informal opinion memorandum stating that the Board should consider the question of potential oil spills in reviewing the HREC application.[69] On January 28, 1977 EPA formally advised the board that it would not object to the issuance of the permit but that it should consider oil spills, water supplies and air pollution in its assessment.[70] The Board met on January 31, 1977 to discuss the application but reached no decision.[71] On February 18, 1977 the board met again and following the addition of an oil spill condition,[72] approved the permit by 4 to 3.[73]

The permit has been subjected twice to judicial review. On May 31, 1977, the Virginia Oyster Packers and Planters Association (VOPPA) filed suit in the Richmond Circuit Court, to appeal the issuance of the NPDES permit.[74] The WCB was the original defendant in the suit, but HREC successfully intervened and was added as co-defendant. A motion by the WCB and HREC to dismiss the case, questioning the legal standing of VOPPA, was denied in October and final arguments heard December 2, 1977. Judge Martin F. Cole took the case under advisement and dismissed the appeal May 2, 1978. In the opinion of the court VOPPA did not demonstrate an error of law by the WCB.[75] A planned appeal of the decision was abandoned in August 1978 for lack of funds.

The second suit contesting the permit was filed in the U.S. District Court in Richmond on June 30, 1977 by the Chesapeake Bay Foundation and Citizens Against Refinery Effects.[76] Defendants in the case were the WCB, EPA and HREC. The city of Portsmouth and Hampton Roads Building and Construction Trades Council successfully intervened and were added as party defendants.

Of the four issues and raised by the plantiff, Judge Robert Mehrige agreed to rule on one charge, that federal law required an EIS prior to the Water Board decision on the NPDES permit.[77] Oral arguments were presented May 16th and a decision issued on June 29th, that the state was not required to conduct an EIS before issuing a NPDES permit. The court concluded the permit did not constitute a major federal action, that EPA had unreviewable discretionary authority not to object to the state decision, and that state issuance of NPDES permits, even though heavily encumbered by federal legislation, was still a state matter. Judge Mehrige however, reversed his earlier decision and agreed to examine the three issues previously deleted.[78]

4.4.4 Groundwater permit

The Water Control Board briefly considered in 1977-1978 whether to require a groundwater permit[79] of Portsmouth for water withdrawals related to HREC water use. The WCB had declared the South Hampton Road's region a "critical groundwater" area, activating an industrial permit requirement for individual industrial withdrawals in excess of

50,000 gallons per day. As the amount of ground water pumped for HREC theoretically could be as high as 400,000 gallons a permit seemed in order.[80] The WCB at first stated a permit would be required based on an informal memorandum from the Attorney General.[81] The board however, reversed the opinion after being informed by later memorandum, that the board had the authority to issue a permit, but not the obligation. Since it had not required the permits in the past, it saw no reason to start doing so.[82]

4.5 Discussion

Changes in the refinery proposal are most obviously noticed in the WCB permit processing. As originally conceived the refinery, because of its closed loop water system, would have had little waste water discharge. It was on this plan that refinery proponents based their early claims of a clean refinery causing no environmental damage. As compared to other refineries of the time, the claim was true. Inability to obtain an ocean dumping permit for insoluble salts ended that proposal. Deep well injection of the solids was bypassed when it was learned that move would require an NPDES permit.

As later modified the refinery would pass its wastes to the proposed HRSD sewage treatment plant and receive treated waste water for cooling purpose. This proposal also had its merits. How better to conserve water in an area recently labeled a "critical groundwater area". Neither did this alternative require a NPDES permit. For while HREC had to meet certain pretreatment standards, only the

Hampton Roads Sanitation District plant at Nansemond needed an NPDES permit. The proposal had several problems in the opinion of environmental opponents. Foremost was the possible formation of chlorinated hydrocarbons potentially hazardous to nearby shellfish beds. The WCB questioned the composition of the refinery discharge, for at the time it was unknown. Secondly some question existed on the mixing of refinery discharges with municipal discharges. If hydrocarbons were present in each how could attribution occur and who would be liable in the event of non compliance. Why the proponents clung to this alternative so long even in the face of escalating opposition, might be explained by their interpretation of the Clean Water Act. It was the "...refinery's intention to use a municipal sewage treatment plant for wastewater treatment in accordance with federal design. The Clean Water Act says by 1983 all industrial wastewater treatment should be treated at municipal plants. It is possible we could be denied an NPDES permit for waste disposal if there is a municipal treatment works and we don't use it."[83] In addition there was serious doubt when, if ever, the Nansemond sewage treatment plant would be funded and built. It was at the time, as hypothetical as the refinery.

The permits required for the two proposals above were a "no discharge" permit for the refinery and a 401 permit for the terminal. The "no discharge" permit was drafted in August of 1974, but a final application never filed, when it was evident a change in discharge plans would be necessary. The 401 permit was filed and obtained well

before the allowed 1 year processing time expired. On May 9th 1975 a revised application was submitted and on January 12, 1976 the permit was awarded, a total of 8 months. If early revisions are included the time is extended 1.5 months for a total of 9.5 months (Appendix II). The 401 permit was mildly controversial for several reasons. First the Board confined itself to the issues at hand, the effects of the dredging disposal related to the marine terminal. As this process met all WCB standards, the permit was granted on the recommendation of the WCB staff. It did not consider any information on the activities of the marine terminal, nor could it. Secondly the Board awarded the permit without a public hearing, finding little opposition expressed on its public notice on the 401 permit.

HREC changed its discharge plans for reasons noted above and applied for an NPDES permit based on water supply from local communities and direct discharge to the Elizabeth River from its own treatment plant utilizing a non-chlorinating process. It was the NPDES application in which "...the WCB did not always [appear] in best light."[84] Opponents alleged that the WCB decision was not supported by substantial evidence, that it violated the administrative process many times, and denied access to citizen groups at meetings with HREC.[85] Much of the above can be explained by a procedural contretemp experienced during the Board's public hearing on the NPDES. The Board had requested an opinion from the state Attorney general's office whether to consider the impact of oil spills. The opinion arrived after the public comment period had closed. It stated the Board

should consider the impact of oil spills. Since the public comment period was closed however, the Board was prevented from considering any information except that which it already had on oil spills. Opponents alleged the omitted material was extensive, proponents disagreed. The board partially circumvented the issue by attaching a condition to the permit that made HREC liable for containment and clean up of spills from tankers transitting to and from the refinery. The condition did more to assuage the feelings of the WCB as even "...HREC and its consultants seem to acknowledge that this condition [was] virtually meaningless."[86] The permit was under consideration from mid-October 1976 to mid-February 1977 and approved just under the four month processing deadline.

Several events related to the WCB processing caused confusion and uncertainty among the participants. Seemingly, EPA both approved and condemned the refinery. During NPDES processing EPA determined the effluent limitations HREC had proposed for itself were in fact more strict than EPA's new source guidelines for petroleum refineries. It did not object to the proposal or the limitations, nor did it exercise its veto power.[87] Yet when asked to comment on the refinery during the PFEIS and FEIS review it said the refinery would adversely affect air and water quality and "...mortgage the environmental interests of future generations."[88] Initially the WCB required a groundwater permit for the withdrawal of water from Portsmouth's wells supplied to HREC. Later when the ratio of groundwater to surface water usage was known the Board reversed its decision. The reversal was never

adequately explained to the public and as reported appeared as an accommodation to HREC, apparently contravening earlier WCB policy.[89]

Criticism of the WCB related to its past record on enforcement surfaced many times during its permit deliberations. The event most often mentioned was Kepone pollution of the James River and its subsequent closure to most commercial fishing in 1975.[90] In the opinion of many, the WCB and its regulations were unable to protect the James then and could not do so now. Even before the Kepone disaster "...the possibility of less than vigorous state enforcement effort was voiced...".[91] Kepone was mentioned in testimony at the 401 hearings[92] and during the EIS review.[93]

Finally, the propriety of the actions of the WCB chairman, J. Leo Bourassa, were questioned. Bourassa attempted to expedite the processing of the Corps permit in March 1978 by contacting acquaintances in the Pentagon. Though he contended his actions were proper, to bypass some of the procedure and push the permit to higher levels, "...Corps officials... privately suggested that Bourassa's efforts could be construed as out of line for an official of a state regulatory body."[94] Though doubtless the Chairman's actions were in the interest of a speedy resolution, they caste final doubt on the objectivity of earlier decisions.

CHAPTER V

THE AIR POLLUTION CONTROL BOARD (APCB) AND THE ENVIRONMENTAL PROTECTION AGENCY (EPA)

5.1 Introduction

Created in 1967, the APCB oversees the utilization of the air resources of the state. The impetus for its creation and the progenitor of its laws and regulations have been the various federal air pollution statutes from the early 1960's on.[1] By far the most compelling of these are the Clean Air Act Amendments (CAA) of 1970 and the Clean Air Act Amendments passed August 7, 1977.[2] Given the federal responsibility for oversight of the provisions of these air laws is the Environmental Protection Agency (EPA) created by Federal Reorganization Plan #4 in 1970. As mentioned earlier the interaction of HREC and the institutions mentioned above begins with the construction and operation permit granted by the air board.[3] As will be examined in the course of this discussion, two other certifications are also required. To understand the significance of each of these, it is necessary to briefly review the Clean Air Act of 1970 as amended.

5.2 Federal air pollution control law

The CAA amendments authorized the establishment of national primary ambient air quality standards (NAAQS) by the EPA for a number of major air pollutants.[4] These are carbon monoxide (CO), photochemical oxidants, nitrogen oxides (NO_x), hydrocarbons (HC),

total suspended particulates (TSP), and sulfur oxides (SO_x). The first four generally relate to auto emissions, the latter two ascribed more to industrial processing. Attainment and maintainance of the standards assures public health protection.[5] The primary standards of greatest interest in this study, were first passed in April 1971.[6] More stringent secondary standards were also promulgated, protecting the public from any known or anticipated adverse effects associated with air pollutants.[7] Unlike the primary standards however, these have no mandatory compliance date.

After the standards were passed, it became the responsibility of the state to devise and implement an air pollution reduction plan. The state, after public notice and hearing, was to adopt and submit a State Implementation Plan (SIP) for EPA approval following the complex guidelines outlined in the regulations.[8] Within the plan the state would detail the methods used for the attainment and maintainance of the primary Air Quality Standards. Submission day for the SIP was 31 January 1972 followed by a four month EPA review and three year compliance deadline. States were encouraged to comply as expeditiously as possible.

Presented in the regulations were the minimum requirements of an approvable program. The SIP must discuss monitoring provisions for stationary sources, control strategies, intergovernmental cooperation, state agency review requirements and preconstruction review procedures.[9] The most important of these is a preconstruction review of new stationary pollution sources to ensure conformance with the

performance standards.[10] As might be expected petroleum refineries are one of the sources named.[11] The preconstruction review was incorporated into Virginia's SIP as the permit process currently administered by the APCB.[12] The permit to construct and operate assures the EPA the board has examined the proposed emissions and that they meet or better the new performance standards. Additional considerations must also be made during the preconstruction review. The state agency must determine if the facility will result in any violation of the state control strategy for achieving and maintaining air quality standards.[13] Implied in this statement is the power to modify or veto any proposed construction.

5.2.1 The emission offset

Another highly important facet of the preconstruction review is the emission offset, or tradeoff policy promulgated by the EPA in December 1976 for sources with allowed emissions greater than 100 tons per year.[14] Initially promulgated as an interpretive ruling by EPA, this policy interjected an element of flexibility into the new source review. Heretofore, it was argued that existing law precluded the siting of new stationary sources of pollution in non-attainment areas.[15] This meant economic growth was prohibited, or restricted at best, in those areas where it was most likely to occur. To an economy based on continued growth and employment expansion, the alternative was untenable. The new EPA ruling allowed for reasonable industrial growth.

After the state determines whether the facility meets the SIP new performance standards, it must perform an air quality analysis to determine the impact of the proposed source on the air quality of the region. An offset credit is needed if the emissions cause a new violation of the air quality standards or exacerbate the conditions in a non-attainment area.

A major new source of pollutants may locate in a non-attainment area only if a number of conditions are met. The most important of these is that more than equivalent emissions reductions be obtained from existing sources, i.e. the substitution of an existing amount of pollution (measured in tons per year) by a new amount from the major new source, yielding a better than one for one improvement.[16] Other requirements exist. The emission offset must be in the area of the proposed source to yield a net benefit in the air quality of the region.[17] All existing facilities owned or operated by the applicant in the same air quality control region must be in compliance with state and federal air statutes.[18] Technology used by the applicant must achieve the lowest achievable emission rate (LAER) with the best available control technology (BACT).[19] Emission tradeoffs are not acceptable unless part of the SIP and therefore enforceable. The emission tradeoff proposal is the responsibility of the applicant and state and is forwarded to EPA as part of the SIP for its approval. After public comment and any modification based on those comments, the offset is approved or denied by EPA and published in the Federal Register.

From the preceding comments it is obvious the SIP is both highly complex and important. The preeminence it has assumed as the major state instrument of the CAA is such that all revisions of the act and its regulations must be reflected in revisions to the SIP. The state's plan is in a constant state of flux. The unsolved dilemma of the state and EPA is that this fosters an ever expanding number of revisions. At its discretion EPA may approve some sections of the SIP, while returning others for revision. The pace of regulation changes has been so rapid that revisions on revisions are the norm. The state does have an SIP, but one which asymptotically approaches completion.

5.2.2 Prevention of significant deterioration

In addition to the certification of new sources, the EPA also examines each project to ensure that non-degredation of existing air quality will occur. Known as a prevention of significant deterioration (PSD) certificate, the process involves the actual operating conditions of a facility and weighs only the projected effect on the ambient levels of key pollutants, particulates (TSP) and sulfur oxides (SO_x).[20] The plan, first adopted in 1974, utilizes an air quality classification scheme by the creation of three designated classes.[21] Within class I areas, the least amount of deterioration is allowed.[22] Therefore any change in TSP or SO_x levels is significant. Class II areas allow a greater amount of deterioration while class III areas may have the greatest concentration of the key pollutants up to the level of the NAAQS.[23] Any amount up to that point is deemed

insignificant. Initially all areas are designated class II, allowing for incremental increases in SO_X and TSP. The plan requires each applicant to show that its emissions, in consort with others in the area, will not violate the air quality increments allowed in a given area. Requirements for control technology are identical to new source standard requirements i.e. BACT.

5.3 Chronological Perspective

The current federally approved SIP of the Commonwealth of Virginia was submitted in 1972 to the EPA as required by the CAA. The plan was approved in part and revised in 1973, 1974 and 1975. The revisions submitted in 1975 were voluminous, consisting of a completely rewritten volume of the Virginia Regulations for Control and Abatement of Air Pollution. Because the changes were so extensive, EPA required a review of all changes between 1972 and 1975 SIP's. This review, submitted in August 1976, had not been resolved in 1979. As will be seen later the delay caused some confusion in the permit process.

Hampton Roads Energy Company initiated the air permit process in February 1974 with a preliminary meeting in Richmond outlining its proposal (Appendix I, IV). To be sure most of the what was presented was familiar, having received wide press coverage. As a result of this meeting, and a subsequent tour of the site, an unsigned draft application was submitted in July of the same year for air board comment. This draft was voided when the company changed sites from

Nansemond to Portsmouth in September 1974. In April 1975 the company met with EPA and the APCB to discuss the various requirements and standards of the permit. Shortly thereafter, on May 13, the permit request was officially received. Yet further information was required and several revisions were made in June. For clarification, EPA was asked what constituted BACT and how the effect of nitrogen oxides and hydrocarbon emissions on ozone levels could be predicted. EPA's reply in September 1975 is significant for its implication: the present state of the art would not allow an accurate prediction about the effect of nitrogen oxides on ozone concentrations.[24] In EPA's opinion however, an increase in emissions would hinder the attainment of oxidant standards. At no time did EPA suggest the permit not be issued. With the permit completed the air board held public hearings in August 1975 and granted a permit to construct and operate a refinery based on the provisions of the SIP on October 8, 1975. Several additional requirements were added by the board. The record shows voluminous correspondence between EPA the air board and HREC, as the company worked toward a completed application. Most of this concerned the completion of an engineering analysis and determination of BACT. Preliminary to the final board decision, a public hearing was held on August 28, 1975. While EPA voiced no objection at the public hearing or at the board meeting during which the permit was granted, it did appear at the public hearing held by the Corps of Engineers on April 19, 1976, on the draft environmental impact statement (DEIS). At that meeting an EPA representative startled all attendees by labelling the refinery "environmentally unacceptable".[25]

Even though the air board had received advanced notice of the comments, they caused serious repercussions with the APCB, EPA and HREC.[26] Many conferences in Philadelphia and Richmond followed to discuss the problem. EPA's statement was based on observed violations in the area of the photochemical oxidant standards.[27] Strictly interpreted this meant HREC could not be located in the non-attainment area where it was planned. Accordingly on June 30, 1976, EPA designated Region VI of Virginia, as being in violation of the NAAQS for photochemical oxidants and required a revision to Virginia's SIP.[28] Following more discussion EPA hired Pacific Environmental Services to verify that HREC was utilizing best available control technology (BACT). The report released in November 1976 concluded that, in general, the total emissions of each pollutant reflected BACT.[29] As a result of the study, the projected emissions of hydrocarbons were revised downward from 2800 tons per year to 1700 tons per year. EPA asked the board to consider imposing stationary source controls on hydrocarbon emissions, but the board was reluctant to do so until EPA could document such controls would have an effect on air quality.

On December 15, 1976, EPA set forth its interpretive rule in response to the rising national concern of no growth in non-attainment areas.[30] This launched another long series of meetings since the HREC permit had been issued before the policy was passed. The record shows some confusion on the part of both the Air Board and HREC. Each considered the offset the responsibility of the other. HREC was

willing to embark on a voluntary inspection and maintainance program (IMP) to reduce its VOC emissions. The state was reluctant to offer the offset for fear of setting a "dangerous precedent".[31] It also was constrained by the ruling in that a control measure could only be used if it were not already included in the SIP at the time the permit was applied for. EPA finally settled the controversy by suggesting a tradeoff similar to that just approved for the state of Pennsylvania. That state would reduce the amount of high petroleum solvent-based "cutback" asphalt to allow for construction of a new Volkswagen plant.[32] Similarly, Virginia could reduce its cutback asphalt use to allow HREC to build. The idea vacillated back and forth between the state and EPA. Should the reduction be only in region VI where the refinery was located or statewide. Should 1975 or 1977 be used as the base year After considerable review EPA allowed the board to use whatever area of the state was necessary to achieve a sufficient reduction. To achieve more than a one for one equivalence, the Virginia highway districts of Richmond and Suffolk were included in the plan, providing a reduction in volatile organic carbons (VOC) larger than the computed emissions of the refinery (Figure 5).

While this was taking place, EPA had granted HREC's PSD permit. The permit, granted 25 July 1977 had been under consideration for slightly over a year since it was submitted in mid-June 1976.[33] Only the refinery was mentioned in this application.

In November 1977, EPA informed HREC that the re-evaluation of its PSD permit, made necessary by the passage of the 1977 CAA, was

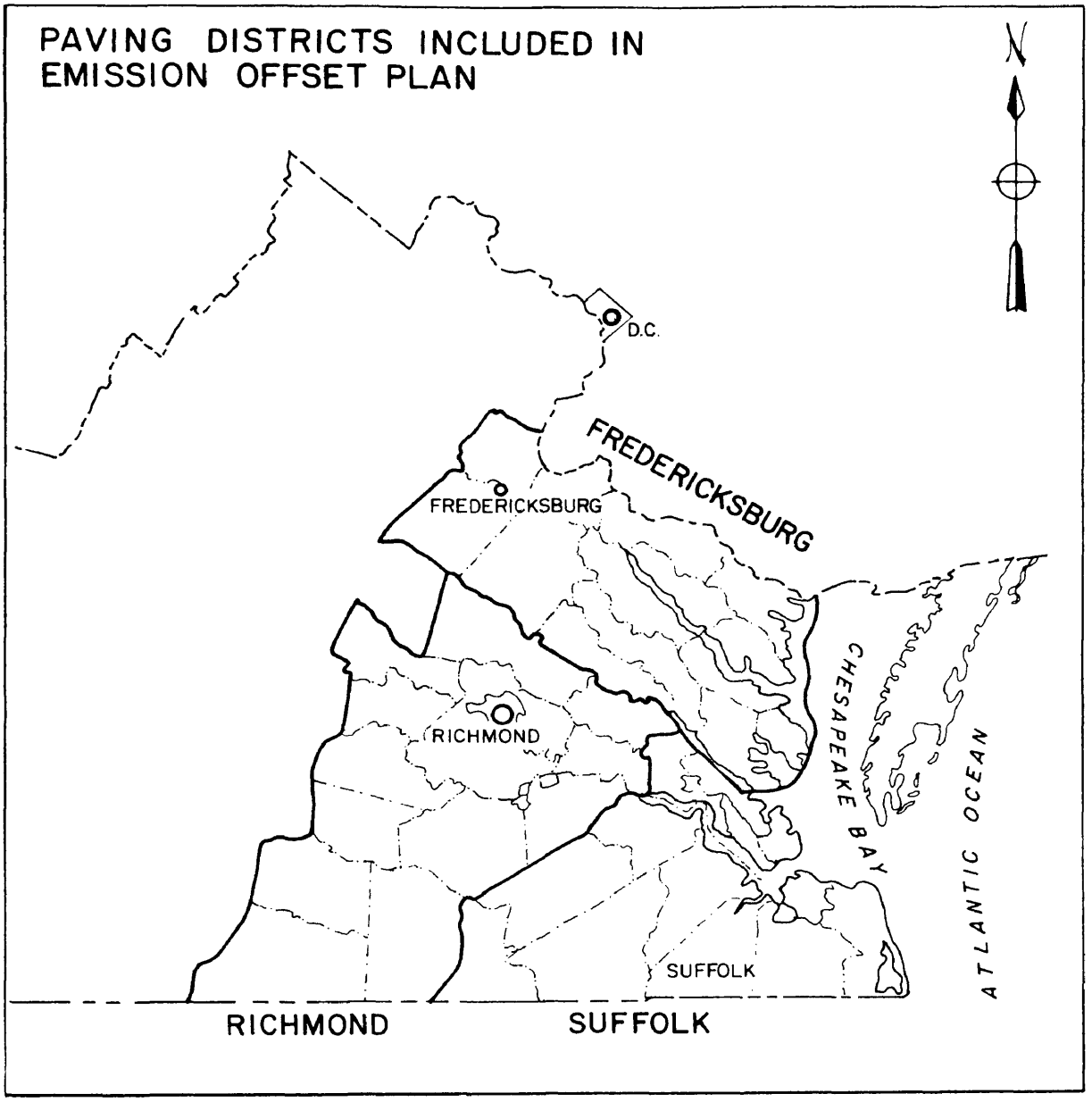

Figure 5. Paving districts used in Emission Offset

complete. EPA reaffirmed the construction and operation of the refinery would not significantly contribute or violate any TSP or SO_X NAAQS. Therefore the permit issued in July 1977 was still valid.

On June 28, 1978 HREC submitted a new PSD application pursuant to the new PSD regulations promulgated by EPA on 19 June 1978.[34] Significantly, these regulations based on §160-169a of the 1977 Clean Air Act, are more stringent than the regulations in several respects. Because of pending litigation in the U.S. Court of Appeals for the District of Columbia questioning the validity of the 19 June 1978 rules and therefore HREC's continuing PSD permit, HREC chose the above action.[35] Meanwhile HREC's first PSD permit, due to expire on 25 January 1979, was extended several times to May 25, 1980. At issue was the reluctance of the EPA administrator to extend any longer than necessary any permit granted under the earlier less restrictive regulations.[36]

The second permit included both refinery and terminal, but proved inadequate. HREC had to supplement the application with an emission and air quality incremental analysis performed by its consultant, NUS Corp., finally completing the application in August 1979. EPA finished its review in that month,[37] notifying HREC of its preliminary determination to approve HREC's second application in October. EPA received public comment in late November 1979, appended a number of conditions to the permit based on the NUS report, its review and public comment,[38] and approved the permit on 25 January 1980.[39]

During this time it was necessary for the company to petition the air board for an extension of its original permit. Granted for a two year period, the permit was due to expire on the October 8, 1977. HREC requested the air board in August 1977 for an extension pursuant to §2.33h, that section of the board regulations requiring construction to begin within two years from the date of issuance. The extension was warranted, the company explained, for the delay was no fault of its own. The Army Corps of Engineers had not yet completed its deliberations on the §404 permit. For the board to grant the permit however, it would have to change the SIP and hold a public hearing for that change. The public hearing following on September 20, 1977 exhibited the by now familiar divisions into proponents and environmentalists. By more than 2.5 to 1 the comments ran against the rule change. Environmentalists viewed the the change as an unwarranted accomodation to industry.[40] By contrast, proponents thought the industry deserved a right to prove its case, to build if it met emission standards.

The board granted the extension October 5, 1977 with modifications to the permit application reflecting minor changes in VOC emissions and monitoring requirements. The Commonwealth requested the offset and permit be made part of the Virginia SIP. HREC was also informed that construction could not commence until the emission offset policy had been resolved. What was not generally known about the boards rule change was this: EPA had not acted upon the revisions made to the 1972 SIP calling for expiration of unused new source

permits two years from issuance. Therefore the 1972 SIP, approved by EPA, was in effect. In that SIP, permits extended indefinitely. The Air board regulations were consequently more strict than those approved by EPA.

Another contretemp illustrates a lack of communication between the state and Federal agency. The air board staff computed the emission offset using an EPA approved method only to discover at the public board hearing on the offset, that the method had changed. The informed source on the change was not from the EPA but from a local environmental group. EPA had the unpleasant task of confirming the environmentalist's information to the air board.[41] The air board staff showed considerable restraint by asking EPA to refrain from extemporaneous regulation changes.[42]

At the end of November 1977, the air board submitted revisions to the SIP including the original permit granted in December 1975 and the emission offset proposed. The proposal, made now official by inclusion in the SIP, detailed a cutback asphalt reduction by the Virginia Department of Highways and Transportation (DHT) in the districts of Fredericksburg, Richmond and Suffolk with a concomitant reduction of non-methane hydrocarbons (NMHC) or (VOC) by 1350 tons per year. Since the computed NMHC emissions from HREC totalled 1293 t/yr., a tradeoff could be made. EPA replied in February 1978 however, that the offset was not approvable. The SIP revision was not specific enough nor enforceable if in the form of a policy statement by the Department of Highways and Transportation. Furthermore,

emission rates in tons per year should be simplified in more enforceable, hourly amounts.

The air board completed the SIP revisions, adding further requirements suggested by EPA for the reporting, monitoring and recording of stacks emitting VOC's, and the EPA regional office accepted them. Supplemental information was requested by EPA and forwarded in March, May and August of 1978 for review.[43] The August submission was a revised permit changing emission limitations from an annual rate to an hourly rate.[44] EPA published the offset and revisions in the Federal Register in October 1978 and received public comment until early November.[45] Objections raised during that comment period centered on seasonal fluctuations of the proposed offset and marine terminal emissions.[46] Both were addressed by the EPA, HREC and APCB in another notice in May 1979, and on January 31, 1980, EPA approved the SIP revisions and emission offset. The APCB had to reissue the state permit in October 1979 since it again was due to expire. It also was included in the SIP revisions.[47]

5.4 Discussion

Unquestionably the air permits are the most difficult to comprehend. Changes in law and regulation caused concomitant change in the permit. Most frequently reissued was the APCB construction and operation permit. Since initially granted in October 1975, the permit has been amended and reissued on three separate occasions, October 1977, August 1978, and October 1979. The duration of the permit is

only two years, the result of an early air board SIP revision. When first extended the permit was contested by opponents who viewed the move as an exception for HREC. As earlier explained however, the action was entirely legal and appropriate. EPA had failed to act on SIP revisions shortening the permit time, therefore, permits extended indefinitely. The two year permit length later agreed upon proved inadequate for a proposal as complex as HREC. The Corps had not finished its review, nor had the EPA. The permit was amended as needed during renewal, in response to EPA requests. The permit was under consideration for 4 months, from June 1975 to October 1975.

The duration of the EPA review may be explained in part by amendments to the Clean Air Act passed by Congress in 1977, and by EPA's own revision of its regulations. PSD regulations were first issued in 1974 and subsequently amended several times. EPA suspended the first PSD permit granted in July 1977 to assess the impact of the immediately effective portions of the Clean Air Act. It reissued the permit in February 1978. EPA extended the permit when petitioned by the company in January 1979, March 1979 and July 1979. EPA was reluctant to grant longer extensions for it had issued new PSD regulations in June 1978 which were then the subject of litigation. Because of the court's decision in one of those cases,[48] EPA issued new PSD regulations in September 1979,[49] but continued to consider applications under the older regulations. Concerned about the pending litigation, HREC had in the meantime submitted a new PSD application in late June 1978 to cover both refinery and terminal. EPA notified

HREC of its determination to grant the permit, in October 1979 and subsequently did so in January 1980. HREC's decision to apply for a new PSD permit merely was to provide a viable alternative should the first PSD permit be nullified.

As originally formulated EPA's regulations precluded industrial growth in non-attainment areas. Opposition by industry and local government forced the Interpretive Ruling providing for emission offsets. The idea of tradeoffs was novel, and subject to much speculation. EPA offered for APCB consideration a previously used emission offset plan. Although wary of the implications, the APCB staff was able to incorporate similar reductions in solvent based asphalt use. The methods for computing the offset were revised based on EPA research and despite criticism to the contrary, the idea originated and was refined by EPA, not the APCB. Incorporating the tradeoff into the SIP was time consuming for several reasons. The APCB did not realize the impact of enforceability necessitating letters from the Attorney General and DHT. EPA received numerous comments to its public notice and hearing. Most important were those on seasonal offsets and emissions from the marine terminal. These questions required more research and modelling, delaying the SIP revision approval even longer.

EPA's processing of the PSD and SIP revisions was criticized by HREC with some justification. The first PSD permit was under consideration for 13 months from June 1976 to July 1977 while the second took 19 months, from June 1978 to January 1980. The emission

offset approval took even longer. Originally submitted in November 1977 the much modified revision was not approved until January 1980, 26 months later. Although HREC termed the delays "unconscionable" and "absurd",[50] there is some reason for delay since EPA was functioning at the threshold of scientific technique.[51] Throughout all three processes EPA was continuous in its application of new modelling data and pollution research, derived from its own facilities and that of its subcontractor, Pacific Environmental Services.

The processing record shows several times when better coordination might have existed between EPA and the APCB. As a result the reputation of the APCB most often suffered. Several examples will suffice: EPA peremptorily announced the proposal environmentally unacceptable. It also failed to notify the APCB of a change in policy for computing the volatile hydrocarbon fraction in its emission. Since the APCB was informed of the change by a refinery opponent at a public hearing, the embarrassment was acute. All served to engender public doubt in a state agency. Overall, given the difficulty and enormity of the task, Federal-state relationships were amicable. Forebearance was evident at both ends. Complete harmony would have been more surprising.

A further cause of uncertainty might be derived from EPA's position on the SIP revision and PSD permit although both are heavily encumbered with by EPA conditions. Its response to the various evaluations of the EIS has been negative. EPA views the site as one of the least desireable environmentally. To an observer unable to

discern between both administrative processes the apparent paradox is confusing.

CHAPTER VI

U.S. ARMY CORPS OF ENGINEERS

6.1 Introduction

On March 3, 1975, Hampton Roads Energy Company submitted a Department of the Army permit application for dredging related to its marine terminal in the Elizabeth River. The material dredged will be piped to the Craney Island disposal area just north of the refinery site. After four years the permit was approved by Secretary of the Army Clifford Alexander, on December 11, 1979. To many observers the Corps participation over those four years seems needlessly protracted. Especially since the environmental information needed for a decision was collected by October 1978, in the Environmental Impact Statement[1] and its supplement.[2] Questions have been raised over the 34 months required to prepare the EIS, and the 14 months following, when the Corps internally reviewed the EIS and proposal. A number of reasons examined in this section explain the lengthy review: opposition by the Corps advisory agencies and special interest groups, changes within the proposal itself, the preparation of the environmental impact statement which required supplementation, and numerous processing procedures related to the EIS and application review. Some observers might also add to the list, the continuing metamorphosis of the Corps from its role of developer to protector of the environment.[3]

Much importance has been attached to the Corps permit, as to its dominance in the permit hierarchy. This may be explained by the Corps

position as the "lead agency" during review of the proposal.[4] It was the Corps permit that was subject to the EIS procedures of NEPA, and therefore the only forum where all impacts of the proposal were considered. Furthermore, Corps regulations prohibit granting a permit until all state permits have been issued.[5] Thus the state permits were prerequisite to the Corps permit.

6.2 Authority and Jurisdiction

Control over dredge and fill activities in navigable waters is shared jointly by the Environmental Protection Agency (EPA) and the Corps. The EPA designates spoil disposal sites utilizing a variety of economic and environmental criteria.[6] More importantly the Secretary of the Army, acting through the Chief of Engineers, licenses dredge and fill activities by permit and may in some cases disregard the EPA guidelines.[7] Section 404 of the FWPCA and section 10 of the RHA support the exercise of this authority.[8]

Administrative processing of permits is lengthy,[9] beginning with public notice and interagency review. The Corps routinely circulates applications to interested local, state and federal agencies for comment. Theoretically this is the first exposure for all agencies to the application. In practice however, the state and local permits may already be granted at the time of application to the District Engineer. The opinions received from other federal agencies are advisory in nature. The EPA comments on environmental quality; the Department of Interior (Fish and Wildlife Service) and National

Oceanographic and Atmospheric Administration (National Marine Fisheries Service), on fish and wildlife, and the Coast Guard, on navigation and safety.[10] State and local government may require permits for water and air use, dredging, building and zoning.[11]

From responses to the public notice and its own preliminary assessment, the Corps decides whether an EIS is required.[12] Size and effect of the project, expected public reaction, and feasibility of the project, define a potential permit action as a major federal decision with significant environmental effects, one requiring an EIS.[13] An EIS is prepared as part of the application, following the Corps EIS procedures.[14] The Corps relies upon the applicant to furnish information for an analysis of the environmental impact of the proposed action. Government agencies, the general public, environmental groups and labor unions potentially affected by the action respond to the draft. The final EIS must include and respond to comments received on the draft EIS from those groups mentioned above.

Although none of the Corps advisory agencies can prevent issuance of a permit, certain procedures exist to arbitrate differing opinions. Resolution of differences is attempted at the lowest level between the disputing agencies. The Corps acts as mediator in the discussion. If the problem cannot be solved it is passed to the next higher level in the Corps chain of command. The process continues upwards if need be as far as the Secretary of the Army.[15] Therefore a permit contested by EPA or the FWS will be forwarded in succession from the District

Engineer to Divisional Headquarters, to the Chief of Engineers and Secretary of the Army.[16] The decision of the Secretary then is final. What may not be apparent is that the review-recommendation cycle, and attempts at reconciliation, are repeated at each level. Substantial delay may occur during the process as new assessments, statements of findings and recommendations are prepared.

Often the most important objections are raised by the Secretary of Interior. Based on mutual agreement, the Secretary of the Army must seek the advice of Interior in difficult cases.[17] Regardless of the strength of objections, the Secretary of Interior is not empowered to prevent a Corps action. Recommendations of Interior must only be given "full consideration."[18]

If conflicting recommendations are given by state agencies, the District Engineer must seek the opinion of the Governor of the state in which the project is located. In the event the District Engineer's recommendation is negative, the Governor must endorse the proposal or the permit will be denied.[19]

Few time constraints limit processing of an application or environmental impact statement. The policy extant seems to be one of flexibility and reasonableness, to allow adequate time for review and comment by agencies and the public. What limits are set forth in the regulations cover the public notice and final decision, respectively the beginning and end of processing.[20] Within 15 days of a completed application, a public notice must be published. An agency response to

the notice should come in 30 days, but in any case not longer than 75 days.[21] All extensions are made at the discretion of the District Engineer. A final decision can be made no earlier than 30 days following completion of the EIS. This applies to the decision of the District Engineer, which as noted earlier, might be a contested decision forwarded to higher administrative levels.

Limitations on EIS processing are similarly brief.[22] The DEIS must be supplied for review 15 days prior to public hearing. Review and comment periods following the hearings may range from 30 to 45 days for both the draft and final EIS.

The Corps must adhere to certain general decision criteria, and policies when considering an application. Historically these were related to unimpeded navigation of the nation's waterways. Then in December 1968, affirming the then recent memorandum between Interior and Army,[23] the Corps changed its regulations to include other factors in what became known as a "public interest review."[24] Included in the review change were broad commitments to conservation, aesthetics, ecology, pollution prevention and fish and wildlife.

In April 1974, the Corps again revised its regulations to incorporate the section 404 permit program of the FWPCA and the requirements contained in new legislation.[25] With minor additions the 1974 regulations were those in effect during the life of the HREC proposal. Added to the public interest review were additional factors including economics, flood damage prevention, water supply and water

quality, recreation, land use classification and historic values. In July 1977 energy needs, safety and food requirements were added reflecting changes in the 1977 FWPCA amendments.[26] All the additions were made more significant by the expansion of the Corps territorial jurisdiction.[27]

Factors relevant to an application are used in a "general balancing process" which weighs the benefits against the detriments of an action. The decision to grant a permit is based on an evaluation of probable impact and intended use on the public interest.[28] Four general criteria guide the Corps in its evaluation: the relative public and private need, 2) alternate locations and methods, 3) extent or permanence of beneficial or detrimental effects and 4) the cumulative effects of the proposal in relation to other existing and proposed activities in the same general area.[29]

The long list of criteria and policies mentioned above however, are criticized as providing limited assistance in the Corps permit review.[30] It is difficult to determine what factors are relevant to a proposal and what constitutes the public interest. Lacking clear standards as to what permits should be approved or disapproved, the permit review has been judged more procedural than substantive. The lengthy regulations merely define a course to follow.[31]

The interagency review, public notice and EIS all provide numerous opportunities for extended negotiation, disagreement and delay.[32] It may be also viewed as a interjecting a "beneficial

eclecticism" in the review procedure.[33] The number of agencies and individuals involved, the time required for each to review and comment, the compilation and reduction of that material, changes which must be commented on, and lack of specific time limits, describe a methodical, often tedious process.

6.3 Chronological Perspective

The significance of the EIS in the Corps permit processing cannot be overstated, for a history of the EIS is a history of the application (see Appendix IV). Its preparation occupied the majority of the Corps time (Table I), some 34 months of a total 53. Opposition to the proposal expressed during earlier state permit reviews by special interest groups presaged further opposition during the federal review. The EIS was the proper forum for the discussion of all the refineries impacts.

That an EIS would be required was never questioned by HREC.[34] Studies were begun on the Nansemond site in the spring of 1974 and completed in August of the same year, well prior to the time of permit application. Much of the material was utilized in the environmental assessment on the Portsmouth site. The Corps acknowledged the need for an environmental assessment in its public notice,[35] and several months later approved the applicant's selection of NUS Corporation, to compile that assessment. Completed in mid-July 1975 the eight-volume EIA was utilized almost in entirety in the DEIS released in November (see Appendix IV).

Plans for the refinery at this time included the use of a proposed sewage treatment plant in Nansemond (HRSD-Nansemond). Treated effluent from HRSD-Nansemond would be used as processing and cooling water. Refinery wastes in turn would be conveyed to the sewage treatment plant. The Corps preliminary findings on the DEIS were that the refinery would have minimal effect on the environment, but that few conclusions could be drawn at this early date.[36] The opinion followed the approval of two state permits by MRC and the APCB in October 1975 and the relatively mild preliminary comments by federal and state agencies.

There followed from the DEIS the preparation of a draft for public hearing. Called the preliminary final environmental impact statement (PFEIS), it incorporated comments on the earlier DEIS. The mid-April 1976 public hearing may be regarded as the beginning of federal and state environmental agency opposition. The criticism was lined for a number of differing reasons. EPA opposed the refinery on its potential air impacts as "environmentally unacceptable." During the comment period following the hearing EPA, FWS and NMFS raised questions[39] on the effect of oil spills, dredging and wastewater discharge on the shellfish resources of the James, basing their comments on earlier reports by VIMS and the BSS.[40] State comments compiled by the COE also included these reports and their conclusions. Public reaction, measured by an informal poll taken by the Corps at the hearing, and responses to the DEIS, did not mirror that opposition. In fact they showed the opposite.[41]

Additionally construction delays at HRSD-Nansemond and the uncertain future of the proposed Suffolk interconnector raised doubts over the availability of either of those facilities. So many questions remained unanswered that the Governor requested a 30 day extension to the comment period. The extension proved unnecessary when HREC changed its discharge plans in early May 1976 (See Appendix IV). It would build its own non-chlorinating waste treatment plant and discharge direct to the Elizabeth River. The new plans however, required an NPDES permit from the WCB and 2 million gallons of water per day for processing and cooling.[42] The Corps suspended processing of the application until the impacts of the move were examined. During the 4 month hiatus that ensued, HREC and its backers also explored potential legal and financial difficulties.[43] It was not until September 1976 that processing resumed.

By September 1976, response to the PFEIS had been reduced by the Corps to a list of questions which were submitted to NUS Coporation. The consultant's responses were incorporated into the FEIS completed in August 1977 and released to the public in mid-October.[44] The Corps advisory agencies continued their unanimous opposition to the refinery.[45] State comments, compiled by the Council on the Environment (COE), included negative comments from VIMS and the BSS. While COE mentioned the potential risks, it did not flatly oppose the refinery, but merely advised caution.[46] Public reaction, as measured by letters received by the Norfolk District Office, was evenly divided.[47] Though the final comment period was to close in

mid-November, the Corps extended it 30 days at the request of EPA and the state. All these negative comments were studied and answered by the Corps as part of the FEIS.

Since the statements of various state agencies were in opposition, the District Engineer requested a state position from the Governor. After meeting with the District Engineer, Governor Godwin endorsed the proposal.[48] Colonel Howard forwarded his negative recommendation, the EIS, application and Governor's approval to North Atlantic Divisional Headquarters (NAD), in early January 1978.

NAD deliberated until early March, affirmed the proposal in its recommendation and along with some reservations over groundwater supply and dredge disposal, forwarded it to the Office of the Chief of Engineers.[49] In early May OCE decided alternatives to the site had not been adequately explored, and returned the application to NAD, who returned it to the District Engineer for supplementation. That supplement took the form of a task force report, with representatives from DOE, EPA, FWS, NMFS, USCG, examining alternative sites for the refinery.[50] The task force considered 67 sites, eventually paring those to 18. Each site was ranked by a number of environmental factors or "key descriptors."[51] What the report proved however, is open to question, for the Portsmouth site ranked low in a number of areas. The final supplement showed serious or severe adverse impacts in 12 of 19 areas. However as the Corps noted, Portsmouth just had to be proven an "acceptable" site, not the best site.[52] The supplement

was augmented by further data on blue crabs, and all the comments received on the FEIS supplement.

This time when the District Engineer forwarded the application, NAD spent little time in review and by the beginning of November 1978, the application was once again in Washington, D.C. at OCE. By the end of November, the Chief of Engineers, Major General John Morris made public his approval.[53] Since the unresolved objections of the FWS yet existed, Morris was bound by agreement to meet with the Under Secretary of Interior. From November 1978 to March 1979 the Chief of Engineers, EPA and Under Secretary of the Interior met on several occasions. When the Chief of Engineers was unable to resolve their objections, the matter was elevated to the Secretary of the Army for final decision on March 19, 1979. The Office of the Assistant Secretary of the Army for Civil Works (OASA-CW) prepared an evaluation of the site for review by Secretary of the Army. Notice for public comment was published the last time on late May 1979 and closed the following month.[54] Secretary of the Army Clifford Alexander deliberated until October 5, 1979 to announce his decision of approval. In that announcement, however, he deferred final decision to allow Secretary of Interior Cecil Andrus a final opinion. When no hope of compromise was evident, Alexander approved the permit on 11 December 1979.

6.4 Discussion

The HREC application represented the first major exercise of the EIS process by the Norfolk District Office. Though this does not imply the quality of the final product suffered, (there were three specific drafts prepared plus a supplement), lack of experience was bound to influence handling, response to comments and compilation of the various editions of the EIS. As will be demonstrated later however, this did not lengthen processing times for the DEIS or the FEIS. The HREC application also represented the first proposal received by the District Office from a refinery. Its unfamiliarity with this type of development cannot be disputed.

The major jurisdictional expansion experienced by the Corps had minimal effect on the processing of the application largely because of the site chosen for the refinery and for dredge spoil disposal. Navigability of the Elizabeth River was not under question, and disposal was planned in the Craney Island disposal area, in use since 1956. What did have effect was the addition of the public interest review and the ecological factors considered during the EIS.

The Corps adhered to its regulations for processing the application and the EIS. Comment periods on all documents were for standard 30 day periods. One 30 day extension for additional comments on the FEIS was granted. The time required for permit review is related to opposition to the proposal. The proposal was under objection by the Department of Interior, Commerce and the EPA, and the

Chief of Engineers and Secretary of the Army were responsible for resolution of those objections if possible.

A total of 53 months was spent by the Corps in preparation of the EIS or processing the application (Table 3). For 34 months or 64% of that time, the application was at the District level, remedying application deficiencies and preparing the EIS. The remaining 19 months or 36%, was spent at higher administrative levels. The majority of that time was spent preparing recommendations, in review, and meeting with DOI representatives. The passing of the application from District to Division to National headquarters involved some redundancy in the form of statements of finding, recommendations and reports. This should be viewed as the workings of a bureaucratic process to a sensitive political issue. Four months or 7.5% of the total time was spent by HREC revamping its proposal to include a direct discharge to the Elizabeth River. The amount of time for preparation of the DEIS and FEIS compares favorably to the average time of processing by the Corps. The Norfolk District took 6 months to prepare the DEIS (Table 3), 3 months less than the Corps average at the time.[55] From the beginning of the FEIS to filing with the CEQ was 15 months, however, during four of those months processing was suspended while HREC changed its proposal. Therefore actual time spent was 11 months, very little different from the 10.5 month average of the time.[56]

It was necessary for the EIS to be supplemented, a fact realized by OCE. The FEIS did not include all information on blue crabs nor

TABLE 3. CORPS OF ENGINEERS PERMIT PROCESSING

CORPS OF ENGINEERS PERMIT PROCESSING

DISTRICT OFFICE	EVENT	DATES	Time (months)
	Application received	MARCH 75	
DEIS	Received EIA from HREC	JULY 75	
	DEIS released	NOV 75	
	Close comments on DEIS	JAN 76	6
PFEIS	Begin PFEIS	JAN 76	
	Close comments	APR 76	3.5
HIATUS	Change in discharge plans	MAY 76 SEPT 76	4
FEIS	Begin work on FEIS	SEPT 76	
	FEIS released	AUG 77	
	Close comments	DEC 77	15.5*
SUPPLEMENT	OCE requests supplement	MAY 78	
	Close comments	OCT 78	5
REGIONAL OFFICE/CHIEF OF ENGINEERS			
	N. Atlantic Division review	JAN 78 MAR 78	2
	OCE review	MAR 78 MAY 78	3
	OCE review of application, Meetings with EPA, DOI	OCT 78 MAR 79	5
	Secretary of Army deliberation	MAR 79 DEC 79	9
APPLICATION (MARCH 75) to approval (DEC 79)		TOTAL	53

*A 4 month hiatus in processing occurred when HREC changed its discharge plans

did it include information on alternative sites. The District Engineer precluded the assessment of other sites considered by the applicant because of expense and complexity.[57] This occurred however before the continued opposition by NMFS, FWS and EPA. A task force on alternative sites, including those agencies might mute that criticism. And to be helpful, the report merely had to find the site acceptable. The matrix assembled by the District almost did not do that. Though the task force claimed to draw no conclusions, these were implicit in the report. Development at the site, as noted by critics, could have "severe" or "serious" impacts in the majority of its environmental categories. Such conclusions weakened the Corps preliminary approval and thus had to be revised by OASA-CW. The entire alternatives discussion closely follows CEQ suggestions.[58] As adherence to procedure while preparing an EIS has been shown to be of major importance, to exclude such a discussion would make the Corps decision less defensible.[59]

Seven specific times were provided during processing for comment by the public and interested agencies: the public notice, DEIS, PFEIS, FEIS, Draft Supplement, Final Supplement, and notification of approval. Initial opposition came from public interest groups such as NOROF, and CAP. From the FEIS on, unanimous opposition was raised by EPA, FWS, and NMFS. That negative comment is significant for it must be answered and the Corps position justified. The applicant's consultant and the Corps were involved throughout processing, answering such comment. Processing time was increased by such comment

but by how much, it is unknown. It has been noted that one purpose of the EIS process is to provide public exposure to an administrative process.[60] To that end it succeeded. The EIS became a written public record of administrative decision making and detailed interagency and public conflict. How effective it is was influencing a decision is another matter.[61] The substantial amount of environmental information generated was considered by the Corps as shown in the District and OASA statement of findings, but discounted. In the Corps opinion the conditions appended to the state and federal permits would provide adequate protection. Possible damage related to oil spills was as speculative as the event itself. The Corps showed consideration of "public interest" factors in its statements of finding and attempted to quantify benefits and costs in the OASA document. The Corps provided adequate consideration of its advisory agencies views. Efforts by the District Engineer, Division Engineer, Chief of Engineers and Secretary of the Army, to achieve a consensus were unsuccessful, but the opportunities were provided throughout processing.

CHAPTER VII

CONCLUSIONS

Whether the refinery should be sited on the Elizabeth River will continue to be disputed. Even after the current round of litigation concludes, environmentalists will discuss the wisdom of estuarine siting, and refinery supporters, the need for an east coast refinery. Yet each would conclude that 11 years spent in processing is too time consuming and wasteful.[1] The key to understanding the HREC processing is understanding the reasons for delay. They are many and they may not be assigned solely to a specific person, event, or agency. While it is true 11 years have been spent on the development of the project, only the years from 1975 to 1980 encompass the proposal as it currently exists. The prior 6 years were spent on a proposal which never, despite statements to the contrary, was viable. The refinery was sited after several unsuccessful attempts at the newly unified land tract in Nansemond. But during the years following, the MACEC/HREC organization was unable to locate a marine terminal for that refinery site. As a result, they could not apply for permits from state and federal regulatory agencies.

From earlier discussion it is apparent that some of the delays experienced from 1969-1975 can be attributed to the promoter and the organization he created. He lacked creditability in the earliest days expending considerable effort just in convincing state officials of the financial soundness of his venture. Until 1971 MARA did not have

a local office. The organization lacked depth, depending on the services of an ad hoc group of engineers, lawyers, consultants and local businessmen. (Conspicuous by their absence were any environmental professionals). It is to credit of that group that local zoning variances were granted, a step where other east coast refinery ventures have failed.[2] However, they were not able to devote full time to the public relations and community acceptance problems that arose.

The refinery, during its early years, did not present the image of a corporation capable of stable, pollution-free operation as was claimed. In protean fashion, the name, office location, personnel, and size and extent of development changed. If all these elements were variable, how variable would its environmental claims be? Refinery officials assiduously promised a "clean" refinery, a non-polluting installation. What they meant of course was the refinery would be built to state and federal pollution control standards, utilizing current pollution and spill control technology. But those standards allowed certain levels of pollution. Opponents viewed any increase, even that allowed by law, as excessive. The refinery was viewed as strictly Nansemond's and later Portsmouth's business without consideration to possible areawide impacts. These opinions were considred naive and heavily criticized by CAP, TROF and CARE.

Though secrecy was necessary during land acquisition to prevent speculation, the methods used to notify and include the public in

development plans were archaic and did not reflect growing sensitivities regarding environmental protection and public safety. As it was, HREC's performance at early public meetings alienated individuals that would later become the core of organized resistance. The Nansemond experience ensured later difficulties. It was a preliminary for opponents who were far better organized when the Portsmouth refinery underwent review.

Recent environmental protection statutes passed between 1969 and 1978 unquestionably lengthened the time of processing. Included in the new laws and regulations were the air and water use and dredge control programs mentioned earlier. Each program required separate application, revisions, meetings, and hearings. The state permits were each processed within 10 months or less over a period from March 1975 to January 1977. By contrast the federal permits took considerably longer. EPA deliberated on the SIP revisions containing the emission offset, for 26 months, and the PSD permits for 32 months. As noted previously, amendments to the CAA caused new regulations resulting in the delay. The Corps took 53 months to grant its permit, largely in the preparation of an EIS and in upper administrative level review. The Corps attempted to achieve a consensus among its advisory agencies and failed.

The absence of a coherent energy policy hindered a quick resolution to the siting of HREC. This criticism of federal government is hardly novel and the popular subject of many recent reviews.[3] It is not within the purview of this study to expand beyond

mentioning that U.S. energy policy during this time was unfocused, conflicting and wasteful, causing shortages and sharp increases in energy prices. A new energy bureaucracy, the Federal Energy Agency, created to consolidate all elements of federal energy policy making, proved unable to decide whether it was an organization intended to make the United States self sufficient in energy or to regulate the pricing and distribution of oil and expose the misdeeds of the oil industry.[4] In the three years from 1973 to 1976 not less than nine different energy czars headed this bureaucracy.[5]

Yet the most significant void was the absence of a state or federal policy designating where refineries would be acceptable. On both levels the need for facilities siting improvements was recognized, but not translated into an effective regulatory process.[6] Several studies by the Commonwealth of Virginia on the topic were published, and an energy facility planning process briefly considered as part of the now defunct Coastal Resources Management Plan.[7] No comprehensive industrial siting legislation resulted, however.

Finally in addition to local and national reasons for delay, there were international causes in the form of the Arab oil embargo. For the months following the economic sanctions of October 1973 by OPEC, a source of crude oil for HREC was questionable. The fourfold increase in a barrel of Arabian crude oil from $3 to $13 also caused a reassessment of the refinery's feasibility.[8]

The result of all these delays was of course a tremendous loss of time and money. It is unfortunate but the collective costs to government agencies, HREC and private citizens is incalculable. As a corollary however, the time required for processing allowed a leisurely environmental scrutiny, to a depth that might not have been possible in a shorter time period.

A number of observations may be concluded from the HREC experience related to the efficacy of current permit methods. It is true that the state regulatory agencies are narrowly focused, that they operate in a "reactive" way to industry proposals, and that the permits are granted in incremental fashion. No state agency had a comprehensive and balanced view of the proposal. Although each had copies of the Environmental Impact Assessment from NUS Corporation, it had not been subject to the EIS process. Even if the EIS could have been required prior to each agency's decision, it is doubtful whether the outcome would have changed. Each agency is limited by statute to activity within its own expertise. The point was proven many times during public hearings when material not pertinent to that specific permit was disallowed. The involvement of each agency starts with a request for an application. To change that role, obviously the law must be changed. One method often cited is the creation of a "one-stop" permitting agency or "fast-track" legislation to speed the siting of facilities of national interest.[9] The inherent shortfalls of such an approach should be recognized and fully explored.[10]

It is evident all state agencies were involved early in HREC's planning. On an informal basis, HREC consulted regularly with the APCB, WCB, and MRC, expanding that relationship upon application. HREC however was committed to both the Nansemond and Portsmouth sites before application. The state was ill-equipped to offer information on the disadvantages of either site. Some site identification and screening capability would have been useful and prevented the difficulties that later arose.

Either the state or the industry could have better informed the public in the earliest years of the proposal. The way the facts were presented at forums hosted by special interest groups left much to be desired. Mutual distrust was evident. It may be that development in this fashion, with so great an environmental stake, cannot be conducted in the future without professionals trained for that purpose. Clearly a more responsive method is needed.

Much of the information requested by state and federal agencies was duplicative. This has been recognized and partially solved by joint permit processing practiced by the WCB, MRC and the Corps. The process, in effect since 1977 does reduce paperwork and foster better coordination among those agencies.

The state agencies and in some respects the federal agencies were not familiar with the type of development proposed. The refinery proposal before the regulatory agencies was the first. They did experience some difficulty making technical decisions and defending

them. The WCB was attacked by special interest groups as not having sufficient information to make a decision on its permit. The MRC was likewise tested in court. All agencies seemed able to discriminate between delaying tactics and significant issues. Some awkwardness and insensitivity was evident in the unusual circumstances that occurred during all permit processes. The experiences of the HREC proposal should provide the sophistication necessary on future complicated proposals, to preclude recurrence.

Some misconception by the public of the purpose of regulatory permitting was evident. The permits license pollution. If the applicant meets or betters the federal and state standards, the permit generally is granted. By so doing the process eliminates fly-by-night corporations with no intention of complying with the standards. Some citizens however, incorrectly view permitting as obstructing development.

The permit extensions granted by state and federal agencies were proper. Where new regulations surfaced, new permits were required. In all cases the reasons for extension were beyond control of the company: other ungranted permits, and not the indolence of HREC.

The EIS process, justly criticized for its tedium and length nevertheless did prove a valuable exercise. A number of conditions appended to EPA and Corps permits may be traced to this exercise. Several changes have been made which conceivably could shorten the process in the future. The DFEIS required for public hearing, has

been eliminated. Only the DEIS and FEIS are now required. This step could have saved as much as three months in the HREC proposal. In addition new regulations have been issued by CEQ to shorten and improve the EIS. Agencies are required to provide justification for their decisions particularly if a less desirable alternative is selected.[11]

Despite the changes that have been made and those events unique to HREC it is doubtful whether sufficient changes have been made to prevent a similar experience by another controversial industry. State and federal permit systems remain largely unchanged. Further development is certain to occur given the future needs of the Commonwealth. The need for an improved factilities siting mechanism is apparent.

APPENDIX I

HAMPTON ROADS ENERGY COMPANY CHRONOLOGY

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HAMPTON ROADS ENERGY COMPANY CHRONOLOGY

DATE	EVENT
3 July 1969	Mr. John Evans meets with representatives of Tidewater Virginia Development Council (TVDC) and is shown the present 623 acre site owned by Norfolk and Western Railroad (N&WRR). Refinery is planned as a "closed cyle", (i.e. zero discharge of wastes). 20,000 B/D small business refinery.
17 July 1969	Conference at TVDC headquarters in Norfolk between Evans, TVDC and N&WRR to discuss acquisition of the railroad property for Mid-Atlantic Refinery Associates, Inc. (MARA).
25 September 1969	Evans, his attorneys and TVDC representatives meet with Gov. Mills Godwin to discuss the establishment of a Foreign Trade Zone (FTZ) at the Portsmouth site.
30 September 1969	N&WRR officials turn down Mr. Evans' offer to purchase the Portsmouth site.
7 January 1970	N&WRR again rejects acquisition attempts of Mr. Evans on the Portsmouth site.
January 1970	Consideration given to establishing an offshore tanker loading and unloading facility near Thimble Shoals.
February 1970	Nansemond County officials approached regarding location of the refinery in that county.
27 February 1970	Mr. Evans and TVDC representatives have confered with Gov. Linwood Holton regarding FTZ in Nansemond.
March 1970	Messrs. Muscoe Garnett and George Cornell work to obtain options on about 3000 acres of land in the Sleepy Hole District of Nansemond County for the oil refinery.
25 March 1970	Ashland Oil company expresses definite interest in Nansemond property. Other unnamed industries follow suit.

2 April 1970	Dept. of Conservation and Economic Development advises discussion of plans with the Water Control Board (WCB) and the Air Pollution Control Board (APCB).
April 1970	TVDC starts work on FTZ application.
June 1970	MARA queries Marine Resources Commission (MRC) for regulations on dredging and construction.
28 May 1970	Options on Nansemond land assigned to Mr. Evans and his lawyers by Messrs. Garnett and Cornell.
7 August 1970	Tidewater International Trade Corporation (TITC) incorporated by TVDC for the purpose of supervising the FTZ.
21 September 1970	Nansemond County Planning Commission approves rezoning of land.
9 November 1970	Gov.-elect Linwood Holton turns down the plan for a pipeline easement along the eastern edge of Craney Island.
16 November 1970	Conference with U.S. Navy regarding plan to run pipeline along southern edge of the U.S.N. Craney Island Fuel Depot.
19 November 1970	Nansemond County Board of Supervisors approve rezoning of Nansemond site from agricultural to industrial.
23 December 1970	Gov.-elect Linwood Holton, Mr. Evans, state industrial officials and representatives from TVDC meet to discuss the establishment of a FTZ at the N WRR site in Portsmouth.
January 1971	MRC queries MARA as to its plans.
24 May 1971	U.S. Navy rejects pipeline proposal.
14 June 1971	TVDC representatives meet with Gov. Holton to brief him on a mooring platform off Newport News and pipeline across Hampton Roads to the Nansemond County industrial site.
25 July 1971	Image and name change from Mid-Atlantic Refinery Associates to Mid-Atlantic Clean Energy Center (MACEC).

August 1971	MACEC investigates a pipeline to mooring platform in the Newport News ship channel, or to C&O coal pier in Newport News.
15 January 1972	Citizen's Against Pollution (CAP) holds symposium on new refinery in Churchland.
June 1972	Land options for Nansemond County site exercised by the Chicago, Bridge and Iron Co. (2100 acres). CB& I plan to lease land to Nansemond who will in turn lease it to the refinery.
30 November 1972	City of Nansemond files FTZ application in Washington, D.C.
December 1972	Name change from Mid-Atlantic Clean Energy Center (MACEC) to Hampton Roads Energy Company (HREC) and Security Marine Terminal (SMT).
21 February 1973	Junior League of Norfolk-Virginia Beach forum in Norfolk on refinery.
12 April 1973	Transcontinental Gas Pipeline Co. of Houston (Transco) plans $635 million network of petroleum-related industries including a $50 million crude oil gateway on N&WRR site.
13 April 1973	Meeting between state agencies to establish a mechanism for close coordination in connection with refinery proposal in Nansemond.
18 April 1973	Abolishment of U.S. oil-import quota system by Richard Nixon.
22 September 1973	Mr. Evans announces a $450 million four-company complex in Nansemond including the 180,000 B/D HREC refinery.
October 1973	Arab "oil embargo" initiated.
January 1974	Cox Enterprises, Inc. of Atlanta, Ga. assumes financial backing of the refinery.
February 1974	Virginia Marine Resources Commission (MRC) receives oyster ground applications for 650 acres of submerged land near Pig Point from project supporters.

22 February 1974	HREC opens office in Suffolk to coordinate the preparation of an environmental impact study by NUS, headed by a Foster-Wheeler engineer.
14 March 1974	HREC opts to go coordinated permit route provided by the Virginia Environmental Quality Act.
Spring 1974	Environmental impact studies begun by NUS, Inc., under contract to HREC.
3 April 1974	Cox Enterprises, Inc. - HREC link announced publicly.
11 April 1974	Plans for synthetic natural gas plant at refinery site dropped.
19 April 1974	HREC confers with Hampton Roads Sanitation District (HRSD) regarding use of effluent from the proposed Nansemond sewage treatment plant for cooling purposes.
May 1974	Environmental impact study completed for Suffolk site - field studies completed in Aug. 1974.
June 1974	State agency meetings with State Council on Environment to discuss coordination procedures related to Virginia's Environmental Quality Act.
May 1974	MRC unofficially states no objection to joint HREC-Va. Chemicals pier in Elizabeth River.
June-July 1974	HREC investigates alternative plans for tanker off loading facility in Elizabeth River in vicinity of Virginia Chemicals Co. utilizing railroad right-of-ways for a pipeline to the refinery.
22 June 1974	Clean Air Act amended.
9 September 1974	HREC applies for Air Pollution Control Board (APCB) permit based on Suffolk site. Air board had 90 days to reach decision.
16 September 1974	HREC withdraws from the coordinated permit process.
23 September 1974	"No discharge" application from HREC received at Region 5 offices of WCB. Water board had 120 days to reach decision.

1 October 1974	Cox Enterprises, Inc. obtains option on the original and present Portsmouth site, previously under option to Transco, Inc.
22 October 1974	Cox Enterprises exercises its option and obtains the Portsmouth site for approx. $4,000,000.
November 1974	HREC moves offices from Suffolk to Virginia Beach.
13 December 1974	HREC announces abandonment of Suffolk site and the plans to build a $350 million refinery on the 623 acre Portsmouth site.
7 January 1975	Portsmouth Planning Commission recommends change in Portsmouth's zoning code to permit petroleum refineries to be built in heavy industrial zones.
20 January 1975	HREC alters discharge plan from "closed loop" system to discharge to a proposed Hampton Roads Sanitation District sewage treatment facility in Nansemond.
January 1975	EPA rejects the APCB's state implementation plan for Virginia.
11 February 1975	Portsmouth City Council approves zoning change allowing for construction of the refinery.
25 February 1975	Chesapeake City Council passes support resolution for refinery.
3 March 1975	HREC applies for § 401 discharge permit from the WCB later amended and resubmitted on 9 May 1975. HREC submits Department of Army application.
6 March 1975	Suffolk City Council pass support resolution.
9 March 1975	Virginia Beach endorses refinery.
11 March 1975	HREC applies for Marine Resouces Commission (MRC) permit to dredge on state-owned submerged lands, and for U.S. Army Corps of Engineers (Corps) permit to dredge in navigable waters.
12 March 1975	Corps ask HREC for additional information on the marine terminal.

26 March 1975	City Council of Norfolk approves support resolution for refinery.
8 April 1975	HREC receives support from Secretary of U.S. Treasury William E. Simon.
17 April 1975	Revised application received by MRC.
25 April 1975	Public notice 75-2256 issued by Corps, comments solicited for 1 month to close on 27 May 1975.
29 April 1975	HREC reapplies for emissions permit from APCB.
13 May 1975	Air emissions permit officially received; subsequently revised 2 June and 25 June 1975.
25 June 1975	Approval of NUS Corp. by Corps of Engineers to provide environmental impact statement for HREC.
22 July 1975	Environmental Impact Assessment submitted by HREC to Corps, unofficially submitted to state regulatory agencies at their request.
7 October 1975	State APCB grants HREC an air pollution control permit, no comment from EPA at this time.
28 October 1975	VMRC decides by 4-3 vote to grant HREC permission to dredge.
17 November 1975	Draft Environmental Impact Statement on Portsmouth refinery released by Corps for review and comment.
26 November 1975	Tidewater Refinery Opposition Fund appeals VMRC's approval of dredging permit.
9 January 1976	WCB approves § 401 permit for Elizabeth River marine terminal.
25 January 1976	EPA terms air-water sections of the EIS inadequate.
15 January 1976	Last day for comment on November DEIS after 45-day extension granted.
17 January 1976	EPA requests extension to 27 January.

26 January 1976	EPA files objections to EIS, terms air-water sections inadequate.
1 March 1976	HREC moves its office to Portsmouth.
10 March 1976	HREC considers direct discharge to Elizabeth River vs. Nansemond HRSD because of postponement of construction of that facility.
14 March 1976	Citizen's Against Refinery Effects (CARE) files administrative appeal in circuit court, of MRC decision.
30 March 1976	Citizens United for Refinery Efforts (CURE) forms.
31 March 1976	Draft Final Environmental Impact Statement (DFEIS) released by Corps prior to public hearing. DFEIS considered favorable but said construction could cause minor impact on air quality.
19 April 1976	Public hearing on DEIS in Portsmouth. EPA delivers "ecological veto", HREC refinery unacceptable because Tidewater Virginia in violation of EPA's oxidant standard.
28 April 1976	VIMS report states refinery is an unacceptable environmental risk for marine resources.
29 April 1976	Gov. Godwin requests extension to mid-May for his decision.
30 April 1976	Last day for comments on DFEIS.
10 May 1976	HREC requests direct discharge permit (NPDES) to Elizabeth River from WCB, considers water intake supply from city of Norfolk. Corps holds EIS process in abeyance until action is taken by WCB.
15 June 1976	Newport News Circuit Court Judge Henry Garnett upholds MRC's refinery decision.
30 June 1976	In response to DEIS, National Marine Fisheries Service (NMFS) recommends denial of permit to Corps based on possible adverse effects.
29 June 1976	WCB votes against request to reconsider water quality (§ 401) permit issued to HREC in January.

1 July 1976	New non-attainment policy on oxidant levels issued by EPA allowing for industrial growth in non-attainment areas for ozone.
29 July 1976	Gov. M. Godwin replaces 3 of 4 members on the Marine Resources Commission.
August 1976	APCB submits thorough review of all changes made in State Implementation Plan (SIP) to EPA at their request.
11 August 1976	CARE claims SAPCB permit illegal since Tidewater in violation of air quality standards.
3 September 1976	In response to Corps (PFEIS), U.S. Fish and Wildlife Service and EPA advise against refinery citing possible adverse effects. Other negative recommendations made by VIMS and BSS.
24 September 1976	58 questions submitted by Corps to be answered by HREC, raised by general public, public hearing, Federal and state agencies and office of chief of engineers.
27 September 1976	CARE requests WCB not to review HREC permit application for direct discharge to the Elizabeth (§402).
11 October 1976	APCB reaffirms permit granted one year ago to HREC.
19 October 1976	HREC files for a National Pollution Discharge Elimination System (NPDES) permit to discharge treated waste water to the Elizabeth River. Corps states EIS progress to stop until new developments evaluated.
November 1976	Pacific Environmental Services, Inc. retained by EPA Region III, certifies "best available control technology" used by HREC.
4 November 1976	Mr. Evans announces inflation of refinery price to $550 million.
7 December 1976	CARE files intent-to-sue notice against to APCB, EPA and HREC.
9 December 1976	WCB public hearing on NPDES permit in Norfolk. EPA supports more stringent standards.

December 1976	NUS, Inc. contracted by HREC to reply to questions related to Corps' FEIS.
21 December 1976	EPA's New source review policy in non-attainment areas proposed. Construction of new industrial facilities permitted in polluted areas only if the net effect is an improvement in air quality.
11 January 1977	Ass't Attorny General rules WCB may consider oil spills when debating discharge permit for refinery.
31 January 1977	WCB deadlocks 3-3 on NPDES permit.
January 1977	Norfolk softens 1975 support resolution.
18 February 1977	WCB votes 4-3 to grant HREC a conditional discharge permit, contigent upon clean up of possible spills from transiting tankers.
22 Febraury 1977	HREC states it will not build the refinery under conditions placed on it.
1 March 1977	NPDES permit issued by WCB.
25 March 1977	Virginia Oyster Packers and Planters Assoc. (VOPPA) joins CARE to challenge WCB decision.
10 April 1977	58 questions submitted by Corps answered by applicants consultant NUS Corporation.
14 April 1977	NUS report on questions raised by FEIS released - mentions possible oil spills.
26 June 1977	APCB extends air permit to allow for unforeseen environmental and administrative delays.
30 June 1977	CARE, Chesapeake Bay Foundation (CBF) file to block NPDES permit in U.S. District Court.
1 July 1977	HREC added as respondent to VOPPA and CARE vs. WCB.
25 July 1977	HREC receives EPA "prevention of significant deterioration" (PSD) permit for emission of sulfates (SO_x) and particulates (TSP).
2 August 1977	95th Congress enacts comprehensive amendments to Clean Air Act.

19 August 1977	Virginia asked for stand on refinery because of conflicting agency recommendations.
19 August 1977	Final EIS completed.
22 August 1977	APCB announces tradeoff of hydrocarbon-based asphalt for refinery emissions at the suggestion of EPA.
23 August 1977	VOPPA appeals HREC permit for waste-water discharge granted by WCB, in Richmond Circuit Court.
26 August 1977	FEIS forwarded to N. Atlantic Div. Corps Headquarters.
1 September 1977	CARE files notice of intent to sue against HREC and APCB.
	Portsmouth files for dismissal of same case.
1 October 1977	At Region III, EPA's request, APCB extends air permit to October 1979.
4 October 1977	CARE files suit against APCB to block extension. Suit is later dropped.
7 October 1977	Final EIS filed with Council on Environmental Quality.
14 October 1977	FEIS released to public.
	"Final" 30 days for public comment on FEIS begins.
15 November 1977	Final comment period extended 30 days after requests by EPA and the state.
25 November 1977	NMFS opposes refinery in response to FEIS circulated for comment.
30 November 1977	APCB requests tradeoff utilizing reduction of hydrocarbon-based asphalt for refinery emissions. The tradeoff or emission offset is included as a revision to the state implementation plan.
6 December 1977	U.S. Fish and Wildlife Service (FWS) opposes HREC citing oil spill.
	EPA opposes refinery citing air quality, degradation and groundwater supplies.

15 December 1977	Closing date for comments on final EIS.
27 December 1977	Federal Energy Agency recommends approval of refinery.
27 December 1977	Va's. Council on the Environment advises extreme caution in decision.
28 December 1977	Outgoing Gov. Mills Godwin supports refinery proposal as an official state position.
9 January 1978	District Engineer's report and recommendations forwarded to North Atlantic Division Headquarters in N.Y., for denial of proposal.
February 1978	Federal court refuses to overturn WCB permit as requested by CBF and CARE.
17 February 1978	EPA reaffirms PSD permit, necessitated by 1977 CAA amendments for SO_x and particulates.
25 February 1978	EPA rejects APCB trade off for reasons of unenforceability and insufficient monitoring.
3 March 1978	N. Atl. Division forwards report and recommendation to office of chief of engineers.
13 April 1978	EPA, NMFS, FWS, Dept. of Energy, Corps officials visit HREC site; provide one more opportunity for public hearing.
27 April 1978	Gov. John Dalton reaffirms support of request of Corps.
4 May 1978	Richmond Circuit Court Judge Marvin Cole dismisses arguments brought by Va. Oyster Packers and Planters Association (VOPPA) against the WCB and HREC.
13 May 1978	Chief of Engineer's, Lt. Gen. John Morris receives EIS and application on the refinery.
26 May 1978	Corps "task force" assembled to examine alternative sites to Portsmouth including representatives from the USCG, EPA, NMFS, FWS, and Department of Energy.
16 June 1978	Office of Chief of Engineers returns report and recommendations to N. Atlantic Div. advising the EIS must be supplemented.

16 June 1978	EPA, Region III recommends approval of emission offset plan for Portsmouth refinery to be examined in Washington, D.C.
19 June 1978	EPA proposes transition PSD program based on the Clean Air Act amendments. PSD approval cannot be given to HREC until emission offset is approved.
23 June 1978	N. Atlantic Div. returns report and recommendation to District.
28 June 1978	HREC submits new PSD application since legality of earlier PSD application questionable based on recent court decision.
21 June 1978	EPA states tradeoff not advised for refinery as 30 day public comment period and not yet expired.
29 June 1979	U.S. District Court Judge Robert Mehrige rules state and federal regulatory agencies not required to issue an EIS before granting a discharge permit.
28 June 1978	1 November 1978 decision date set by Corps.
28 July 1978	WCB Secretary Davis states groundwater permit is required if refinery is to utilize groundwater from Portsmouths supply.
28 July 1978	Draft supplement filed with EPA.
4 August 1978	Draft supplement released for public comment on alternative sites, 18 alternatives considered.
4 August 1978	VOPPA withdraws appeal in circuit court when Judge Cole says no error by WCB shown.
5 August 1978	Task force draft report indicates Portsmouth one of the preferred, but not the best site on the East Coast for a refinery.
7 August 1978	APCB approves changes in air permit to satisfy EPA concerns on air monitoring procedures.
9 August 1978	Comment period on supplement extended to 7 September.

11 August 1978	WCB reverses decision on groundwater permit on advice from Ass't District Attorney Evans, permit will not be required.
18 August 1978	Richmond Circuit Court Judge Robert Mehrige promises quick decision CARE, CBF vs. HREC and SWCB on issuance of discharge permit.
7 September 1978	Closing date for comments on Draft Supplement to FEIS.
8 September 1978	EPA extends 1 December construction deadline to 19 March 1978.
10 September 1978	Judge Mehrige rejects HREC's to dismiss suit.
13 September 1978	Virginia's Council on the Environment endorses refinery after reiteration of objections by other state agencies, i.e. BSS, VIMS.
22 September 1978	Final Supplement to EPA and public.
28 September 1978	CARE announces plans to test groundwater permit.
4 October 1978	Corps states local opinion will weigh heavily in final decision.
6 October 1978	APCB recommendations for tradeoff plan for refinery only published in Fed. Reg.
10 October 1978	Va. Beach softens refinery support.
10 October 1978	Emission offset published in Fed. Register for comment.
19 October 1978	Norfolk rescinds 1975 resolution of support and reaffirms 1977 resolution stating lack of technical expertise hinders their decision, permit should be denied until technical questions regarding Portsmouth are answered.
23 October 1978	Public comment period closes on supplement to EIS.
26 October 1978	EPA formally recommends denial.
27 October 1978	District forwards report and recommendations to office of the Chief of Engineers.
2 November 1978	Dept. of Defense endorses refinery.

3 November 1978	Briefing for chief of engineers by District, Division and Washington staff.
8 November 1978	Marine Resources Commission states refinery site harmful.
9 November 1978	Comments closed on emission offset.
28 November 1978	Chief of Engineers recommends tentative approval based on several conditions including the preparation of a spill prevention and containment plan by HREC. Decision subject to review by Secretary of Interior.
29 December 1979	NOAA-NMFS again recommends denial.
3 January 1979	CEQ establishes new EIS guidelines to streamline procedure, effective 30 July 1979.
3 January 1979	Department of Interior continues opposition citing Hampton Roads as "one of the worst locations in the U.S.".
6 January 1979	EPA disputes corps on economic predictions, continues opposition to proposal.
11 January 1979	Under Secretary of Interior Joseph formally invited for discussions by Chief of Engineers.
26 January 1979	Corps of Engineers and Interior Department attempt to resolve differences at Washington meeting.
25 January 1979	EPA extends PSD permit through 19 March 1979 at the request (21 November 1978) of HREC.
26 January 1979	EPA relaxes ozone standards from .08 to .12 pp.
14 February 1979	Corps requests possible conditions for permit from EPA at meeting to discuss differences.
28 February 1979	Meeting with USCG on permit conditions.
19 March 1979	PSD permit extended conditionally by EPA to 25 July 1979 at the request of HREC.
19 March 1979	Chief of Engineers Morris recommends approval over unresolved objections of other Federal agencies, refers case to Secretary of the Army.

19 March 1979	HREC's application to Corps elevated from the office of Chief of Engineers to the Secretary of the Army for final decision.
11 April 1979	Ass't Sec. of army Blumenfeld prepares "in-depth evaluation" for Sec. of Army Alexander - expected decision in July.
12 April 1979	Virginia laws providing for unlimited recovery of oil spill cleanup expenses endorsed by U.S. Circuit Court.
23 May 1979	End comments period for federal agencies.
24 May 1979	EPA reaffirms objections to the refinery, suggesting further study.
28 May 1979	NOAA objects strongly to permit for refinery.
22 June 1979	End public comment period.
12 August 1979	CARE announces plans to appeal PSD permit granted by EPA.

APPENDIX II

MARINE RESOURCES COMMISSION CHRONOLOGY

APPENDIX II

Marine Resources Commssion Permit Processing

DATE	EVENT
June 1970	From MRC, TVDC requests permit application and information on "dredge and fill regulations."
15 January 1971	MRC requests information on the status of application, TVDC advises MRC of right of way difficulties.
August 1971	Counsel for MACEC meets with MRC to discuss rights of way across oyster grounds.
10 August 1971	Counsel for MACEC notified by MRC commissioner that MRC will act as coordinating agency for all state approvals.
March 1973	MRC meets with other state agencies to discuss permit coordinations.
September 1973	NOROF meets with state agencies including MRC, to discuss permit coordination.
February 1974	Four Virginia attorneys apply for dormant oyster leases between Nansemond and Newport News, to prevent occupation by opponents.
May 1974	MRC unofficially offers no objection to joint pier with Va. Chemicals, Inc.
1 March 1975	MRC submerged lands permit filed, but voided.
5 March 1975	Permit resubmitted by HREC.
7 March 1975	MRC notifies adjacent property owners of extent and purpose of application.
11 March 1975	HREC reapplies for MRC permit, MRC accepts permit as complete.
17 March 1975	MRC acknowledges permit and queries HREC on EIA.

31 March 1975	J. Evans revises permit to better define extent of dredge disposal.
16 April 1975	MRC forwards permit details to VIMS and WCB.
17 April 1975	Revised application received from HREC.
28 May 1975	Public notice of application for submerged lands permit.
20 June 1975	Comment period closed on public notice.
22 July 1975	MRC receives 2 copies of EIA from HREC.
10 September 1975	VIMS comments to MRC.
16 September 1975	MRC hearing on HREC application in Newport News.
28 October 1975	MRC passes by 4-3 vote the application of HREC for use of the Commonwealth's submerged lands, and appends conditions to the permit.
26 November 1975	TROF notifies MRC of intent to protest permit, files notice in Newport News circuit court to appeal decision.
March 1976	MRC comments on draft final environmental impact statement.
16 June 1976	MRC decision upheld in Newport News circuit court.
29 July 1976	3 MRC members opposed to refinery not appointed by Godwin.
December 1977	MRC comments on FEIS.
8 November 1978	MRC commissioner in personal opinion voices objection to the refinery.
November 1978	MRC permit extended to December 1980.

APPENDIX III

STATE WATER CONTROL BOARD PROCESSING

APPENDIX III

STATE WATER CONTROL BOARD PERMIT PROCESSING

DATE	EVENT
2 AUG 1974	Rough draft for no discharge certificate completed
	Rough draft for no-discharge certificate received
28 SEPT 1974	Preliminary draft of no discharge certificate received
10 DEC 1974	Meeting discussing the application and site change to Portsmouth
11 DEC 1974	Withdrawal of no-discharge certificate application
20 JAN 1975	HREC opts for direct discharge to Elizabeth River requiring 401 certificate
10 MAR 1975	Application for 401 certificate sent by Regional Office of SWCB
31 MAR 1975	Reappliication for 401 certificate necessary because of revisions
30 APR 1975	Staff meeting discussing application
9 MAY 1975	Revised application received, considered viable
16 MAY 1975	Tidewater Regional Office (TRO) requested by Bureau of Enforcement to comment on 401 application
11 JUNE 1975	Comments submitted by TRO
22 JULY 1975	NUS - Environmental Assessment received by WCB
8 SEPT 1975	Staff review comments to HREC and requests for additional information
16 SEPT 1975	HREC responds to staff requests
23 OCT 1975	Staff completes review process

30 OCT 1975	First draft 401 certificate
7 NOV 1975	Second draft 401 certificate
18 NOV 1975	SWCB receives DEIS
8 JAN 1976	Final draft 401 certificate
12 JAN 1976	401 Certificate issued
13 JAN 1976	SWCB comments to COE, Richmond
6 FEB 1976	Consolidated comments on DEIS forwarded by COE
5 APR 1976	Proposed FEIS released
15 APR 1976	WCB comments on PFEIS to COE
10 MAY 1976 JUNE 1976	Staff review of FEIS Comments to COE
28 JUNE 1976	401 Permit reaffirmed by Board
SEPT 1976	Consolidated comments on FEIS forwarded by COE
19 OCT 1976	NPDES application received from HREC
5 NOV 1976	Agency Task Force meets in Richmond to discuss application
7 NOV 1976	Public notice on NPDES application issued
9 DEC 1976	Public hearing on proposed NPDES permit
23 DEC 1976	Staff response to WCB questions
7 JAN 1977	Attorney General's opinion received stating oil spills may be considered as a condition for permit
31 JAN 1977	Special meeting conferred to discuss oil spill
18 FEB 1977	Permit granted by 4-3 vote with attached conditions
25 MAR 1977	VOPPA challenges SWCB suit in State Circuit Court

MAY 1977	Clean Water Act passed
30 JUNE 1977	CARE, CBF File to block NPDES permit in Federal District Court
22 NOV 1977	SWCB suggests need for groundwater permit by Portsmouth for withdrawals and sale to HREC
FEB 1978	CARE, CBF suit altered
4 MAY 1978	VOPPA suit denied
29 JUNE 1978	CARE, CBF suit denied
18 SEPT 1978	WCB reverses decision on groundwater permit on the advice from attorney general, no permit required

APPENDIX IV

AIR POLLUTION CONTROL BOARD AND ENVIRONMENTAL PROTECTION AGENCY PERMIT PROCESSING

APPENDIX IV

APCB and EPA PERMIT PROCESSING

DATE	EVENT
14 FEB 74	HREC outlines its proposal at Richmond
14 MAR 74	APCB, NUS tour Suffolk site
18 APR 74	Second HREC presentation in Richmond
15 JULY 74	Unsigned draft application received from HREC
29 JULY 74	Application revised
5 SEPT 74	Signed draft application submitted to APCB
20 SEPT 74	APCB requests information from EPA on particulates
27 SEPT 74	APCB outlines for HREC permit deficiencies
3 FEB 75	Information received from EPA on photochemical oxidant modelling
4 APR 75	APCB meeting to set emission standards and discuss draft
16 APR 75	APCB officials tour Louisiana refinery and talk with Air Board officials
18 APR 75	Draft permit forwarded to EPA Region III
25 APR 75	APCB, HREC, Foster Wheeler (HREC's contractor), EPA Region III meet to discuss standards and draft permit
12 MAY 75	APCB Region VI Engineer Analysis received in Richmond
13 MAY 75	Permit officially received
2 JUNE 75	Permit revised and updated
16 JUNE 75	EPA asked for specific information on Best Available Control Technology (BACT)

19 JUNE 75	Engineering analysis completed
25 JUNE 75	Permit revised and updated
7 JULY 75	Revised Region VI Engineer Analysis received
8 JULY 75	EPA asked for technical support on oxidant attainment
11 JULY 75	Revised Engineering Analysis completed
14 JULY 75	APCB, EPA Region III and Pacific Environmental Services, Inc. meet to discuss HREC, BACT
22 JULY 75	NUS Environmental Assessment received
23 JULY 75	EPA notified of public hearing, sent completed permit package, Engineering Division Analysis, technical description of refinery
28 AUG 75	Public hearing in Norfolk on HREC permit application
9 SEPT 75	EPA provides comments to APCB on impacts of air emissions
7 OCT 75	Air Permit approval by APCB
8 OCT 75	Approval letter to HREC with conditions
20 JAN 76	EPA Region III comments on DEIS: air portion judged inadequate
16 APR 76	EPA advises APCB that HREC "environmentally unacceptable"
19 APR 76	Corps of Engineers public hearing, EPA announcement of unacceptability because of impacts on air quality
20 APR 76	EPA, APCB, HREC meet on EPA's position
21 MAY 76	Region III comments of PFEIS; air permit may be in violation of CAA
6 JUNE 76	HREC files PSD application with Region III

19 JUNE 76	EPA and HREC meet to discuss emission requirements
21 JUNE 76	HREC submits supplemental information on control technology
24 JUNE 76	HRED files amended PSD application with Region III
1 NOV 76	EPA publishes BACT review of proposed refinery
21 DEC 76	EPA publishes Interpretive ruling on emission offsets
17 FEB 77	EPA completes modeling of TSP and SO_2 emissions
24 FEB 77	HREC counsel writes to EPA Administrator for assistance and explanation of delay
23 MAR 77	EPA indicates progress to HREC
28 MAR 77	EPA files notice for 30 day comment period
6 APR 77	EPA explains delay to HREC
25 JULY 77	Region III issues PSD Permit
7 AUG 77	CAA amendments signed by President
11 AUG 77	HREC requests permit extension and variance
20 SEPT 77	Public hearing in Norfolk
5 OCT 77	APCB grants extension, no construction until SIP revision
11 NOV 77	HREC notified PSD permit suspended for CAA review
30 NOV 77	APCB submits revision to SIP reflecting emission offset
6 DEC 77	EPA receives HREC's permit extension, and state's proposed offset

DEC 77	EPA sends concerns to CORPS on FEIS over, ecological concerns
7 FEB 78	HREC counsel requests news of requirements review from EPA
17 FEB 78	EPA reissues PSD permit for TSP and SO_x after review of CAA amendments, states developers must begin by 1 December or face stricter standards.
25 FEB 78	EPA rejects SIP revisions for reasons of unenforceability
22 MAR 78	EPA receives explanatory information from APCB
APR 78	Alternate siting explored by Corps
MAY 78	Task force established including EPA
1 JUNE 78	VAPCB and Va. confirm enforceability of tradeoff
16 JUNE 78	EPA accepts emission proposal, submits to EPA HQ
19 JUNE 78	New PSD rules issued
28 JUNE 78	HREC files new PSD application includes refinery and terminal
JULY 78	APCB submits revised SIP to EPA
4 AUG 78	New PSD application completed with receipt of NUS report from HREC
11 AUG 78	Region III revises HREC permit reflecting hydrocarbon emission rates for refinery
17 AUG 78	EPA acknowledges permit completion
7 SEPT 78	EPA recommends substantial revision to draft supplement of FEIS
19 SEPT 78	EPA completes documentation on SIP revision for Federal Register
10 OCT 78	APCB SIP revisons on emission offset published in Federal Register

23 OCT 78	EPA recommends denial on Corps permit
9 NOV 78	Public comment on SIP revisions closed
21 NOV 78	HREC request extension of PSD permit and interpretive ruling
28 NOV 78	Corps notifies EPA of intention to issue permit
22 DEC 78	EPA Deputy Administrator, NOAA Acting Administrator write to DOI Undersecretary recommending opposition to water permit
4 JAN 79	Deputy Administrator, EPA objects to Corps permit
25 JAN 79	Region III grants extension through 19 MAR 79, General counsel denies interpretive ruling: EPA deadline can not extend
27 JAN 79	EPA relaxes ozone standards citing research showing smog to be less dangerous than previously thought
2 FEB 79	HREC supplements and amends request
14 FEB 79	Region III requests additional information from state on seasonal offsets
15 FEB 79	HREC submits additional request for interpretive ruling, claims arbitrary and inconsistent treatment
19 MAR 79	Region III extends permit to 25 July 79
1 MAY 79	Region III publishes second notice on emission offset relative to seasonal offset and marine terminal emissions
25 JULY 79	Region III extends 1st PSD permit to 25 May 80
21 JAN 80	Region III approves new PSD permit (from 28 June 78)
31 JAN 80	Region III approves SIP revision including the emission offset

APPENDIX V

CORPS OF ENGINEERS PERMIT PROCESSING

DEPARTMENT OF THE ARMY PERMIT APPLICATION PROCESSING HISTORY

DATE	EVENT
3 MAR 75	HREC submits DOA application
25 APR 75	Public Notice 75-3356 issued
27 MAY 75	Closing date for comments on Public Notice
25 JUNE 75	Approval of NUS Corp. as applicant's environmental consultant
22 JUL 75	Environmental Impact Assessment submitted by applicant
5 OCT 75	Applicant receives permit from VAPCB
28 OCT 75	Applicant receives permit from VMRC
17 NOV 75	Draft EIS released to public for review and comment
12 JAN 76	VSWCB certificate of assurance approved (§ 401 permit)
15 JAN 76	Closing date for comments on DEIS
17 MAR 76	Public Notice 76-2256A announces public hearing
31 MAR 76	Proposed final EIS completed for public hearing
5 APR 76	Proposed Final EIS released to public
19 APR 76	Public hearing in Portsmouth
29 APR 76	Gov. Godwin asks for 3 week extension to 19 May
30 APR 76	Public hearing file closed on FEIS
MAY-SEPT 76	HREC revises plans to include: 1. point source discharge to Elizabeth River 2. water intake from City of Portsmouth

24 SEPT 76	Environmental information requested from applicant as a result of questions from public and state and federal agencies
1 MAR 77	NPDES permit issued by VSWCB
11 APR 77	Environmental information received from applicant's consultant
25 JUL 77	EPA letter of approval for PSD received by HREC
19 JUL 77	FEIS completed
26 AUG 77	FEIS submitted to North Atlantic Division of Corps (NAD)
7 OCT 77	FEIS filed with CEQ
14 OCT 77	FEIS released to public
15 NOV 77	Final day for comments on FEIS extended 30 day at request of state, EPA
15 DEC 77	Closing date for comments on FEIS
29 DEC 77	Gov. Godwin affirms state position
9 JAN 78	District Engineer's Report and Recommendation furnished to North Atlantic Division
3 MAR 78	NAD forwards report and recommendation to OCE (Office of Chief of Engineers)
13 APR 78	EPA, FWS, Corps visit site and give additional time for public comment
2 MAY 78	OCE requests supplement to EIS on alternative sites
26 MAY 78	Task force to be formed by CORPS consulting agencies, FWS, USCG, NMFS, EPA and DOE to study alternative sites
16 JUNE 78	OCE returns report and recommendation to NAD advising EIS must be supplemented

23 JUNE 78	NAD returns report and recommendation to District
28 JULY 78	Draft supplement filed with EPA
4 AUG 78	Draft supplement to FEIS released to public
7 SEPT 78	Closing date for comments on draft supplement to FEIS
22 SEPT 78	Final supplement to EPA and public
23 OCT 78	Closing date for comments on Supplement
27 OCT 78	District report and recommendation to NAD forwarded to OCE
3 NOV 78	Briefing for OCE by District, Division Washington Staff
28 NOV 78	OCE grants tentative approval, must meet with DOI because of their objections
26 JAN 79	Undersecretary of Interior meets with Chief of Engineers to discuss differences
13 FEB 79	EPA, CORPS meet to discuss differences
20 MAR 79	OCE recommends approval, decision elevated to Secretary of Army because of unresolved differences with EPA, FWS
11 APR 79	Sec. Army inspects site
22 JUNE 79	Closing date for comments on HREC application
5 OCT 79	Sec. Army approves permit, but waits Sec. of Interior comments
16 NOV 79	Sec. Interior still opposed
11 DEC 79	Sec. of Army approves permit

NOTES

1. For a brief history on the emergence of environmentalism see: Cahn, Robert. 1978. Footprints on the planet. N.Y.: Universe Books 198-226. Davies, J. Clarence and B. Davies. 1977. The politics of pollution. Indianapolis: Pegasus. 80-102. For a more general treatment of conservation and public opinion see: Huth, Hans. 1972. Nature and the American - three centuries of changing attitudes. University of Nebraska Press 249 p., Roelofs, R., et. al. 1974. Environment and Society. Englewood Cliffs: Prentice-Hall 374 p., Worster, Donald, 1979. Nature's Economy. N.Y.: Anchor Books. 424 p.

2. A number of recent reviews explore U.S. oil policy, the OPEC embargo and the energy crisis: Vernon, R. ed. 1976. The oil crisis. N.Y.: W. W. Norton, Inc. 301 p., Mancke, R. 1977. Providing for energy. N.Y.: McGraw Hill Book Co. 134 p., Martin, P. H. 1976. "The poverty of American energy policy." 12 Tulsa L. J. 65-103, Szulc, T. 1978. The energy crisis N.Y.: Franklin-Watts 152 p., Anon. 1979. "The oil crisis is real this time" Business Week 30 July 1979 p. 44-59.

3. Risk benefit analysis is one method increasingly used to assess the impacts of energy-related development. See Zinn, J. 1980. "Energy in the coastal zone: a question of risk." 7 Coastal Zone Management J. p. 123., Smalley, R. D. 1980. "Risk assessment: an introduction and critique" 7 Coastal Zone Management J. p. 133.

4. Why this is so is noted by Garret Hardin in "Tragedy of the commons," 162 Science 1243 (1968). "...[T]he rational man find that his share of the cost of the wastes he discharges in the commons, is less than the cost of purifying his wastes before releasing them. Since this is true for everyone, we are locked into a system of fouling our own nest, so long as we behave only as independent, rational free enterprises." See also Davies and Davies 1977, pp. 7-26.

5. The description aptly defines "third party effects or externalities," a market inefficiency caused by the uncompensated effects of pollution. See Barkley, P.W. and D. Seckler. 1972. Economic growth and environmental decay. N.Y.: Harcourt Brace and Janovich 193 p.; Freeman, M.A. 1978. "U.S. Air and Water Policy," in Portney, Paul (ed.). Current issues in U.S. environmental policy. Baltimore: The Johns Hopkins University Press. pp. 12-67.; Kneese, Allen V. and C. L. Schntze 1975. Pollution prices and public policy. Washington: The Brookings Institute.; Page, Talbot. 1977. Conservation and economic efficiency. Baltimore: The Johns Hopkins University Press, pp. 83-105; 176.; Dorfman, R. and N. Dorfman 1972. Economics of the environment. NY: W.W Norton, Inc. pp. 3, 21, 69, 261.

6. Davies and Davies. 1977. p. 4 "Scientific knowledge of the effects of pollutants is inadequate." While the technology may

exist for controlling a known pollutant, the level at which it is controlled may be disputed.

"Pollution cannot be defined with any scientific or mathematical finality. The concept hinges on the concept of human use, and thus while we may be able scientifically to define what level of environmental quality is necessary for particular uses, the definition of what constitutes pollution is dependent on the public's decsion as to what use it wants to make of its environment. It becomes a political decision..." p. 5.

7. See introductory material Portney, 1978 p. 1-11. Also in the same volume, Seskin, H. "Environmental policy and the distribution of benefits and costs" p. 144-163. An estimate for air and water pollution control for 1972 to 1981 is 227 billion, 106 billion for air pollution and 121 billion for water pollution. The amount does cause a reordering of other socially desirable goals. U.S. Council on Environmental Quality. 1973. Environmental Quality 1973. Washington, D.C.: Government Printing Office p. 93. See also Anon. 1980. "Clean water: industry's job has just begun" Business Week 25 February 1980 Special Report, pp. 62B-62J.

8. Economist A. Myrick Freeman III summarizes: "...ambiguity and ambivalence in congressional statments of policy objectives place substantial burden on the administrator of [each regulatory

agency]... The selection of objectives is ultimately a political one. What ought to be done is constrained by what can be done." in Portney, 1978 p. 18.

9. The following paragraph draws generally from: Murray, W. G. and C. Seneker. 1978 "Industrial siting: allocating the burden of pollution," 30 The Hastings L. J. 301-336; Friesma, H. and P. Culhane. 1976. "Social impacts, politics, and the environmental impact statement process," 16 Nat. Res. J. 339-356.; Dreyfus, D. and H. M. Ingram 1976. "The National Environmental Policy Act: a view of intent and practice," 16 Nat. Res. J. 243-262.; Schindler, D. W. 1976 "The impact statement boondoggle," 192 Science 509., Peterson, Russell W. 1976 "The impact statement - Part II," 193 Science 193., Cortner, 1976. "A case analysis of policy in implementation: the National Environmental Policy Act," 16 Nat. Res. J. 327.

10. No where is the purpose displayed better than by, William Tucker. "Environmentalism and the leisure class. Harpers., Dec. 1977, pp. 49-80.

11. See Davies and Davies, 1977, p. 227; Page, 1977, p. 99; Freeman, 1978, pp. 18-20. Incentives have been described as "...an attractive complement to existing programs of direct administrative regulation" Anderson, F. R. et. al. 1977.

Environmental improvement through economic incentives. Baltimore: The Hopkins Press. p. v.

12. Veteran Tidewater politician Roy B. Martin stated, "I haven't seen any controversy other than busing raise more comment." "Marine Terminal approval stands," Virginian Pilot, 29 June 1976.

13. The following papers were reviewed Virginian Pilot/Ledger Star, Daily Press/Times Herald, Richmond Times Dispatch, and Washington Post.

14. The site has long been under industrial consideration. Originally consolidated from a number of unimproved farms in 1951, the land was considered up to 1955 for an oil refinery by Standard Oil of New Jersey. Since that time the site has been planned for a number of now defunct ventures: Pfizer Pharmaceuticals citric acid plant, 1970; Tasty Bakery sugar beet refinery, 1972; Tenneco-Westinghouse construction facility for floating nuclear plants, 1973; Transco Energy Co. and Conoco oil gasification and fuel oil refinery, 1974.

15. "It's not only the best industrial site in Portsmouth, but is probably one of the best sites in Tidewater or the East coast" said Robert Craighead, manager of the industrial real estate division of Norfolk α Western R.R. "Prime site beyond reach of industry," Virginian Pilot 7 Nov. 1976.

16. HREC is chartered in Delaware primarily because the state corporation laws have been designed to be highly responsive to management needs. See "Delaware works hard to stay a corporate home sweet home" Fortune, 13 Feb. 1978, 132.

17. For a more complete discourse on the project see, U.S. Army Corps of Engineers, Norfolk District. October 1977. Final Environmental Impact Statement, Hampton Roads Energy Company's Portsmouth Refinery and Terminal - Portsmouth, Va. (hereinafter FEIS, 1977) and _____. September 1978. Final supplement to the final environmental impact statement, Hampton Roads Energy Company's Portsmouth Refinery and Terminal - Portsmouth, Va. (hereinafter Supplement, 1978).

18. VA. CODE ANN. 62.1-3. (1977 Cum. Supp.).

19. Federal Water Pollution Control Act 1972, 401, 33 USC 1341 (1977).

20. FWPCA 1972, 402, 33 USC 1342 (1977).

21. Clean Air Act (1977), 42 USC 7470 et. seq. (1977).

22. Air Pollution Control Board. Regulations for the control and abatement of air pollution Revision I-V. Richmond, Va.

23. For primary standards see 36 Fed. Reg. 22384 (1974), 40 CFR pt. 50.

24. 41 Fed. Reg. 55524-30 (1976) codified at 42 USC 7470-7491 (1977).

25. 42 U.S.C., 7470-7475 (1977)
43 Fed. Reg. 26403 (1978).

26. The plan is required within 6 months and be implemented within a year after beginning. 40 CFR 112. (1977).

27. Respectively 33 USC 40; 33 USCA 1344 (1977).

28. National Environmental Policy Act of 1969, 42 USC 4321-4347 (1970).

29. 33 CFR 154 SUBPART B "OPERATIONS MANUALS" and
33 CFR 154.110 respectively.

1. To be eligible for a "small business set aside" the refinery was limited by law to 30,000 barrels per day (B/D) and less than 1000 employees. The "set aside" provides a small business with a second look at the bids of larger corporations on government contracts. The process is designed to foster competition by enhancing the viability of the small firm. The small business refinery would have competed with the majors on defense fuel contracts. See 13 CFR 127.15 (1978).

2. The FTZ, originally conceived by Congress to abet American business, is a delimited area on American soil treated for customs purposes as a foreign country. Raw foreign materials are combined with American labor and capital in the zone to create a finished product. The product may be shipped from the zone to foreign countries without paying duties and tariffs. Only when the finished product is imported to the United States are the appropriate duties levied. Because of this procedure, the amount of oil imported could be separated from quota system of the MOIP. The purpose of the FTZ was to obtain unlimited amounts of crude oil for MARA. See 19 CFR 146 (1978).

3. The MOIP passed in 1959 during the Eisenhower administration limited imports of foreign crude oil when it started making serious inroads in the rapidly expanding U.S. market. Continued through the Kennedy and Johnson administrations, the program was

rigorously studied by a cabinet task force during the Nixon administration and subsequently scrapped in April 1973. A review of the process may be found in Bradford, P. A. 1975. Fragile Structures: A Story of Oil Refineries, National Security, and the Coast of Maine. 392 p. (hereafter Bradford, 1975).

4. The Hawaiian refinery was approved in January 1969 largely through a move of political spite involving then Secretary of Interior Stewart Udall and outgoing President Lyndon Johnson. Bradford, 1975 p. 121.

5. Id. The subject of the entire book is the Machiasport, Maine proposal.

6. Ibid. p. 26.

7. Evans is given to inspirational rhetoric as this modified quotation from Victor Hugo illustrates. "I do believe the time for this idea is right now ... the political, economic, and social factors involved make the project we are discussing an ideal one that has the best possible chance of succeeding..." Letter, John K. Evans, MARA to C. E. Hunter, TVDC, 23 July 1969.

8. TVDC is supported by voluntary contributions from twelve political subdivisions including Norfolk, Virginia Beach, Portsmouth, Chesapeake, Suffolk, Smithfield, Franklin, Boykins, Windsor, Isle of Wight County and Southampton County.

9. NWRR would be glad "...to give the proposal further consideration providing the project included some new dimension more meaningful to the railroad." Presumably this meant an equity position in the new refinery. Letter, J. E. Savely, NWRR to L. Eldon James representing MACEC, 30 September 1969.

10. Part of the pursuasion covered environmental affairs, echoing Evans' earlier statement, "This complex will not pollute either the air or the water or any part of the environment." See "Protection of environment promised by refinery Virginian Pilot, 25 July 1971. Also letter, John K. Evans, MARA to Richard M. Nixon, President of the United States, 8 December 1971.

11. The "poor lands" were an anachronistic trust established in the mid-1600's by the will of then Governor Richard Bennett for the betterment of the poor of the area. By Act of Assembly in 1921, property lines were stabilized and title of the land vested in 5 trustees. Any profit generated from the use of the lands had to be used to better the poor of the district. When the land was sold in 1970, the trustees petitioned the Assembly to use those funds for the benefit of the entire city. The Assembly consented.

12. These initial criticisms and those heard shortly after at a symposium on the refinery influenced Evans to change the name of MARA to Mid-Atlantic Clean Energy Center (MACEC). The center

would produce "clean" fuels such as low sulfur fuel oil. The move was an adroit response to mounting environmental awareness. Later in December of 1972, Evans would change the name to Hampton Roads Energy Company (HREC) and separate the refinery from Security Marine Terminal (SMT) (See Table 1).

13. C.B.&I. builds, among other things, large petroleum storage tanks.

14. Va. Code Ann. 62.1-13.5 3(i) (1977 Cum. Suppl.).

15. Knowing the FTZ process to be protracted from his Maine experience (See Note 3 infra), Evans provided for an alternative. He applied to have the refinery first classifed as a Class 6 Customs warehouse, which would allow the manufacture, storage and sale of finished petroleum products from imported crude, until the FTZ subzone was approved. Evans explained the action as a combination test case and acceleration ploy. Application for a Class 6 Warehouse required just the approval of the U.S. Customs Service, far more expeditious than the FTZ Board of the Department of Commerce. See 19 CFR 19.1(a)(b).

16. The application was later returned to the locality for more environmental information.

17. James was discouraged from the alternative by the Corps, who feared westward expansion of the site might place hazardous

overburden on the pipeline. Also James said this move would expose the project to needless litigation if contested by aggravated shorelands owners. Memo for file, L. Roberts, TVDC, 22 July 1970.

18. There is some question why Holton was ever consulted in the first place since the title to the Craney Island Disposal site was controversial and still is. Virginia disputes the federal government's claim to the dredge spoil area.

19. Holton further added, "Based on current economic conditions it would be unsound to encumber this large tract of prime urban land by granting an easement with indeterminate conditions and unknown effects on the potential. The area offers vast opportunities for planned development which would stagger the imagination...an easement for the proposed pipeline could jeopardize future development of the area." Letter, Governor Linwood Holton to L. Eldon James counsel for MARA, 9 November 1970.

20. The Navy cited the disruption of routine caused by construction, the degree of commercial access required, and interference with the combat readiness of the service. Letter, Rear Admiral P. E. Seufer, USN Facilities Engineering Command, to L. Eldon James 24 May 1971.

21. Detailed for the governor were the various firms purportedly backing the proposal with financial or technical assistance. Evans had even arranged for a representative from Kidder Peabody, the New York financial house to meet with Holton, ostensibly to lend credence to the proposal. Holton, however, did not think the visit necessary. Letter, L. Eldon James to T. Edward Temple, Commissioner of Administration, 7 April 1971.

22. To ensure the viability of this alternative, Virginia attorneys from Dow, Lohnes and Albertson, the Washingon law office representing HREC, applied for dormant oyster leases between Pig Point and the channel. Actually the route was considered briefly in 1970 and then discarded when it was learned from Rear Admiral Allen of the Coast Guard that an elaborate procedure including public hearings would be involved.

23. The Corps reasons for undesirability were never articulated. Later correspondence and newspaper reports refer only to undefined "water resource" problems. Memos for file, H. B. Hunter, TVDC, 24, 31 May 1974.

24. Ibid.

25. The similarity between Evans earlier proposal, rejected by NWRR and the Transco-Conoco operation is amazing - a $50 million crude oil "gateway" for offload and storage, linked with oil refineries

and gasification facilities for a total investment of $635 million. Either Transco provided more inducements for NWRR, or the nationally recognized firm possessed more credence, or both. Transco, operating a natural gas transmission line from Texas and Louisiana to the major wholesale markets in the east coast, was in an ambitious program to expand gas supplies. The Tidewater plant was part of that expansion.

26. Evans had been associated with the media-based corporation through the Hawaiian Independent refinery, managed by Garner Anthony, a Cox son-in-law. Cox Enterprises is a media-based corporation headquartered in Atlanta. Cox has newspapers in Atlanta, Ga., Springfield and Dayton, Ohio and Miami and Palm Beach, Fla. In addition the company has controlling interest in Cox Broadcasting Corp., a network of television stations, and Cox Cable Communication, a cable television systems firm.

27. See "Firm shifts refinery site," Times Herald 13 December 1974.

28. Among these were, Shell Oil Company, Ashland Oil Refinery Co., Transco Gas Pipeline Co., Reynolds Aluminum, Commonwealth Gas Pipeline Co., Columbia Gas System, Mitsui, Inc., Dupont Inc., Union Carbide, Royster, Illinois Nitrogen, General Electric, and others.

29. During its formative months little was revealed to the public. "The nature of the operation has been kept secret, and the secrecy stirs unrest and fright among the residents of the adjacent property," reported the Virginian Pilot, 20 August 1970. See also "Mystery surrounds oil refinery plans" Virginian Pilot, 21 July 1972. In addition, the name and office location had changed several times:

DATE	CORPORATE NAME AND ADDRESS
17 JULY 1969	MID-ALANTIC REFINERY ASSOCIATES, INC. SUITE 917 1010 VERMONT AVE. NW WASHINGTON, DC
25 JULY 1971	MID-ATLANTIC CLEAN ENERGY CENTER SUITE 917 1010 VERMONT AVE. NW WASHINGTON, DC
DEC 1972	HAMPTON ROADS ENERGY COMPANY SECURITY MARINE TERMINAL 501 N. MAIN ST. P.O. BOX 1276 SUFFOLK, VA
6 JAN 1975	HAMPTON ROADS ENERGY COMPANY SECURITY MARINE TERMINAL PEMBROKE 1, SUITE 215 218 INDEPENDENCE BLVD. VA. BEACH, VA
1 MARCH 1976	HAMPTON ROADS ENERGY COMPANY SECURITY MARINE TERMINAL SUITE 202 CENTRAL OFFICE BLD. 330 COUNTY ST. PORTSMOUTH, VA.

30. Eldon James succintly offered, "Quiet planning is good business - we don't want to get false hopes up... If we beat the drums and then it falls through, you look like a jackass." He might also have added secrecy measurably aided the quick aggregation of the land by Cornell and Garnett.

31. The refinery was debated at a number of meetings sponsored by various groups from 1970-1974. These were important for they shaped public opinion and fostered the growth of several special interest groups. At issue was more information: the character and extent of development, plans for financial backing, pollution control and environmental impacts. In September 1970 the Nansemond County Planning Commission held a public meeting on the rezoning of the newly unified Nansemond tract (Figure 2), from agricultural to heavy industrial use. Unexpectedly the meeting lasted 8 hours while over 150 opponents spoke. Representatives from the Council on Environmental quality, Inc., Citizens Against Pollution, and the Tri-County Health Center "emphatically, irrevocably and without reservation" opposed the move, asking for a moratorium on the action until more adequate environmental laws were on the books ("Nansemond board delays decision on rezoning issue," Daily Press, 7 November 1970). Individuals from local subdivisions adjacent to the tract also condemned the move as placing heavy industry next to Portsmouth's most restrictively zoned residential areas.

Several business, environmental and civic groups held a symposium in Churchland on January 1972 entitled "Oil Refineries in Tidewater to have or have not," to allow MACEC an opportunity to educate the public on its plans. The result was a classic example of mistrust, ignorance and well meaning, but misapplied fervor. Correspondence between sponsors and attendees was biased, predicting future catastrophe. MACEC representatives, alarmed at the program's structure, imperiously demanded last minute changes. Fearing a "kangaroo court." MACEC accepted the offer of a local labor leader and packed the hall with placard waving union supporters (Memo J. Evans to L. Eldon James, 6 December 1971). The results stunned refinery opponents. As best they could, MACEC proponents explained the "clean refinery" to be built, but the discourse was rambling, evasive, and divulged little of importance.

The Norfolk-Virginia Beach Junior League sponsored a symposium in February 1973, differing in approach by billing the meeting as a debate between refinery backers and opponents. Invited by invitation only were civic, business, state and federal representatives. Citizens Against Pollution debated refinery proponent George Cornell, representing MACEC. Significantly, the CAP representative felt hampered by the lack of information from the developer. MACEC was unresponsive to her requests. However the debate was inconclusive, the public was

assured the refinery would meet all the environmental requirements contained in the statutes.

Refinery opponents, specifically Tidewater Refinery Opposition Fund (TROF newly formed from the Nansemond Oil Refinery Opposition Fund) sponsored a rally at ODU in May 1974 to publicize the need for strong public and financial support. The meeting had little impact on either because of sparse attendance. The "secrecy and hypocrisy of the Suffolk politicians" and the apathy of the citizens were roundly castigated. Difficulty obtaining information was again cited (See "Antirefinery forces at ODU" Virginian Pilot 16 May 1974). The meeting was the last prior to state involvement. When HREC began applying for permits, all the information requested earlier became available.

32. "Paperwork moves fast on permits for refinery." Virginian Pilot, 2 August 1974.

33. 10 Va. Code Ann. 181, 185 (1977).

34. See note 31, quoting Gerald McCarthy, COE chairman.

35. Comments by the SWCB illustrate the point. One segment of the proposed guidelines, requiring an EIA prior to processing, was termed "legally unenforceable." Other parts "...[would] insure complete confusion and publicly display disagreement between various state agencies." At no place in the review did any

"...joint consideration/review of any facet of the proposed project [occur]." Memo R. E. Bowles, WCB to E. T. Jensen, 9 August 1974.

36. Letter James A. Treanor, III, Dow, Lohnes and Albertson to G. McCarthy, COE 9 Sept. 1974. Treanor stated that application through COE would "...leave my client adrift in a process lacking clearly defined procedures... the legislature conferred coordinating authority on [COE], [but] failed to standardize procedures before the various state boards...".

1. VA CODE ANN. §62.1 (Cum. Suppl. 1978)
"All beds of the bays, rivers, creeks and shores of the sea within the jurisdiction of this commmonwealth; and not conveyed by special grant or compact shall continue and remain the property of the Commonwealth..."

2. Mean Low Water (MLW) is recognized by the Commonwealth as the limit of littoral private ownership. Virginia is one of five other states which depart from the common law position of the mean high water (MHW) ownership. See generally Maloney, F. and R. Ausness. 1974. "The use and significance of mean HW line in coastal boundary mapping" 3 N.C. Law R. 186., Nelson, R. 1970. "State disposition of submerged lands vs. public rights in navigable waters." 3 Nat. Res. L. 391., Teclaff, L. A. 1970. "The coastal zone - control over encroachments into the Tidewaters." J. Maritime L. 241.

3. VA. CODE ANN. 62.1-3 (Cum. Suppl. 1978).

4. Id. In granting or denying any permit for the use of state owned bottom lands the Commission shall be guided in its deliberations by the provisions of §1 of Article XI of the Constitution of Virginia and shall consider... the effect of the proposed project upon other reasonable and permissible uses of state waters and state owned bottom lands, its effect upon the marine and fisheries resources of the Commonwealth, its effect upon the

wetlands of the Commonwealth ...its effect upon adjacent or nearby properties, its anticipated public and private benefits, and in addition thereto, the Commission shall give due consideration to standards of water quality as established by the SWCB...". Letter, Alec Redon, TVDC to Virginia Jones, MRC 13 January 1971.

5. Id. Specifically mentioned are the Water Control Board, VIMS, State Health Department and State Corporation Commission, although any agency may be consulted. Often the most important comments come from VIMS, the scientific advisory body for the MRC.

6. Office of Commerce and Resouces. 1979. Report of the Secretary of Commerce and Resources to the Governor of Virginia and the General Assembly. Senate Document 8. p. 43.

7. See Chapter 2.1, footnote 21 for an explanation of the techniques used to bypass the wetlands regulations. In response to MRC's request for information on the project status 6 months later (Jan 71), TVDC replied the application was in abeyance pending many other unresolved issues, namely land and rights-of-way.

8. Letter, E. James to K. Peterson, 10 August 1971. Commissioner Douglas said his agency would act as coordinating agency for all approvals. He also advised Eldon James that crossing the private

rocks could prove to be very expensive. Baylor crossings would require an Act of Assembly. Later in 1974, leases for dormant oyster rocks on either side of the proposed pipeline to the Newport News C&O pier were applied for by Virginia attorneys representing the firm. The move precluded similar action by environmentalists seeking to block the underwater pipeline. The event was dramatically reported in the press, "Pier 9 rumored sought as oil pipeline terminal," Daily Press, 11 April 1974.

9. R. Porterfield stated: "Since the project was moved from Suffolk to Portsmouth extensive work was required on the overall assessment. Even though most of the data has been collected, the data reduction and report preparation won't be complete for some time." Letter, R. Porterfield, HREC to J. Douglas, VMRC, 19 March 1975.

10. Evans wanted to avoid any possibility of conflict with adjoining waterfront property owners and avoid any possibility of objection to the extent of dredging since the limit of wetlands was uncertain.

11. Letter, Thomas A. Barnard, VIMS to James C. Douglas, MRC 10 September 1975. The comments arrived in time for Commission consideration. VIMS assessed both refinery and terminal impacts on the marine environment, working from the MRC application and HREC's/NUS Environmental Impact Assessment (EIA) supplied to MRC

in July 1975. They felt four areas were inadequately addressed regarding the refinery. 1) methods for minimizing adverse effects of dredging, 2) impacts of major oil spills, 3) clarification of spill prevention, containment and clean up system in the terminal area, 4) protection of wetlands from construction and oil, and advised" ...answers to these questions and appropriate provisions for preventing... such environmental difficulties. They further suggested the use of conditional permits or delaying the decision if questions on the terminal couldn't be resolved.

12. See letter, M. E. Bender, VIMS to J. Douglas, MRC 18 September 1975 on toxicity and impact of oil on marine resources.

13. In a vote on the draft permit the Commission split 3-3, with Douglas breaking the tie on the final permit. Included in the permit were 17 conditions, some as a matter of course, others tailored for the refinery. Most notable were #2, HREC must have an adequate spill containment system installed and employed during barge and ship load/offload, and #4, Dredging, to minimize impact on fisheries, was not to be conducted during Jan., Feb., July, Aug., Sept., Dec. See VMRC Permit No. 75-62.

14. Proposed by commission member Russell C. Scott finding 3 read, "Although the commission recognizes the concern expressed by spokesman for the fisheries industry over the impact of the

proposed facility on the marine fisheries, we find from the record that there is no reason to believe that the facility, operated as proposed and with safeguards imposed by the Commission, will necessarily impact the marine fisheries adversely." Minutes, VMRC, 28 October, 1975. The finding was rejected 4-2. The majority of the MRC did believe the refinery would have impact on marine fisheries.

15. See VA. CODE ANN. §28.1-33 (Cum. Suppl. 1978) for an explanation of the judicial review of contested permits.

16. Specificially: 1) what was the nature of HREC's discharge to the James At the time it was unknown., 2) what were the additional dangers to marine resources if hydrocarbon waste was chlorinated at the sewage treatment plant , 3) what was the impact of the discharge on oysters , 4) what was the impact of oil spills on oysters .

17. Garnett stated in his order filed 7 July 1976 that MRC "was not required to consider the effect of wastewater effluent from the proposed refinery to be constructed on highland near the marine terminal." Furthermore the decison of MRC "... was consistent with and fulfilled the requirements of §62.1-3 as set forth... and was supported by the evidence before the commission."

18. Letter J. Douglas, MRC to S. Wilburn, COE 9 December 1977. Douglas noted the division of opinion among Commission members, "... please be advised that there is no unanimous opinion among the members of the Marine Resources Commission as to how to respond... however a majority opinion does emerge."

19. Letter J. Douglas, MRC to J. B. Jackson, COE 11 October 1978. Although the commission "never evaluated the refinery as a total project;" it determined at this time that the "refinery would have severe impacts on wetlands and commercial and sports fisheries." See "Refinery site called harmful" Virginian Pilot 8 November, 1978.

20. The permit may be extended at the discretion of the Commission if justifiable cause for doing so is presented. HREC detailed at length in its letter the problems faced during processing.

21. Va. Code Ann. 62.1-44.2 (Cum. Suppl. 1978).

22. "Fuel-tank 'farms' abound on Chesapeake waterfront," Virginian Pilot, 20 February 1978.

23. "Three lose seats on Virginia panel," Virginian Pilot, 29 July 1976. Joan Skeppstrom (active in TROF), Royal C. Insley and Russell C. Scott (active in CBF) were replaced. Sewell Headley was not. Although 3 of the 4 voted against in the final permit decsion, all opposed the refinery at some time during the review.

24. "No boat rockers welcome..." Virginian Pilot editorial, 30 July 1976.

1. Va. Code Ann. 62.1-44.1 et seq. (Cum. Supp. 1977)

2. Va. Code Ann. 62.1-44.15 3(a)-(b). See "State water quality standards" in: SWCB. 1978. Statutes, Regulations, Policies. Publication No. RB-1-78, Section RE-1. Richmond: Commonwealth of Virginia.

3. Va. Code Ann 62.1-44.15 (5) 62.1 Article 3.

4. The relationship between state and EPA is clearly indicated in 118 Cong. Rec. H.9129 (daily ed. 4 October 1972). Congressman Wright, a conferee stated, "In that event [EPA approval of the state permit program], the States, under state law, could issue state discharge permits. These would be state not Federal actions and thus, whether for existing or new sources in section 306, such permits would not require EIS's." as quoted in Dolgin, E. and T. Guilbert. 1974. Federal Environmental Law. St. Paul: West Publ. Co. p. 735. (hereinafter Dolgin and Guilbert, 1974).

5. FWPCA § 401, 33 U.S.C. 1341 (1977)

6. FWPCA § 402, 33 U.S.C. 1342 (1977)

7. FWPCAA of 1972, 33 U.S.C. 1251 et seq. (1972)
FWPCAA of 1977, known as Clean Water Act P.L. 95-214, 33 U.S.C. 1257 et. seq. (1977)

8. FWPCA §101 a(1)(2), 33 U.S.C. 1251 a(1)(2) (1977)

9. FWPCA §301 b(1)(2), 33 U.S.C. 1311 b(1)(2)

10. FWPCA §306 b(1)(A), 33 U.S.C. 1316 b(1)(A)

11. FWPCA §307 (b)(1), 33 U.S.C. 1317 (b)(1)

12. FWPCA §303 (e)(1), 33 U.S.C. 1313 (e)(1)

13. FWPCA §303 d(1)(c), 33 U.S.C. 1313 d(1)(c)

14. The distinction between standards and limitations must clearly be made. Water quality standards define the ambient levels of various pollutants within a receiving body of water. They are more difficult to enforce, one reason earlier water pollution legislation based on standards lacked the efficacy to improve water quality. By contrast effluent limitations define a level of pollutant which may not be exceeded in an industrial wastewater discharge.

15. 40 Fed. Reg. 16563, May 9, 1974.

16. Ibid., but note also standards for petroleum refining were being litigated at that time. American Petroleum Institute vs. EPA. 540 F.2d 1023 (10th Cir. 1976).

17. See Notes, 1972 "Public regulation of water quality in Virginia," 12 W&M Law Rev. 424, 471. (hereinafter Notes, 1972)

18. Va Code Ann. 62.1-44.2 (Cum. Supp. 1977).

19. Va. Code Ann. 62.1-44.3 (6),(8),(10).

20. See note 17 infra, p. 439. At least 10 other agencies and commissions had the power to promulgate policy.

21. See W. Walker and W. Cox. 1973. "Virginia water policy: the imprecise mandate" 14 W&M Law Rev. 31, for a perceptive discussion on Virginia water policy.

22. See note 17 infra, p. 450, Va. Code Ann. 62.1-44.16 2(a)

23. 33 U.S.C. 1160(b)(1970)

24. Id. at (c)

25. 40 CFR 120, "Commonwealth of Virginia Water Quality Standards"

26. Va. Code Ann. 62.1-44.16

27. Ibid. at 44.18,19

28. Id. at 44.17

29. See note 2 infra for the standards.

30. Section 21b of the Water and Environmental Quality Improvement Act (33 U.S.C. 1171 et. seq. 1970).

31. Dolgin and Guilbert, 1974, p. 734, "If a state wanted to enact more stringent standards than the federal government, it would do so through section 401 by denying certification or attaching conditions to a permit, which must be included in the federal permit. [401(d)]. In this manner the states may protect their own system of water quality regulation, which the FWPCA allows to be more stringent than the federal system.

32. See note 6 infra.

33. See R. Hall. 1978. "The Clean Water Act of 1977." 11 N. Res. Law, 342.

34. See note 21 infra.

35. Most notably from the Rivers and Harbors Act of 1899, The Refuse Act, 33 U.S.C. 407 (1977).

36. See Evans, J. 1978. "Federal water pollution control act discharge permit system, an industrial viewpoint," 10 Nat. Res. Law 761 quoting Judge Breitenstein in Dupont vs. Train, 541 F.2d 1018(1977).

37. 33 U.S.C. 1311 (a)

38. 33 U.S.C. 1311 b(2)(A)

39. 40 CFR 419.12 and 40 CFR 419.13 respectively

40. The relationship may easily be shown by two regulated pollutants, BOD and oil and grease.

Standard		Allowable Pollutant Levels (kg/1000m^3 feedstock) MAXIMUM ONE DAY	AVG DAILY VALUE (For 30 days shall not exceed)
BPCT (40 CFR 419.12)	BOD	27.7	12.0
	Oil & Grease	6.9	3.7
BAT (40 CFR 419.13)	BOD	2.5	2.0
	Oil & Grease	.5	.4
NEW SOURCE STANDARDS (40 CFR 419.15)	BOD	11.8	6.3
	Oil & Grease	3.6	1.4

41. 40 CFR 128, 40 CFR 419.16 (1977).

42. Id.

43. FWPCA §402(a), 33 U.S.C. 1342 (a)

44. FWPCA 303, 304, 33 U.S.C. 1313, 1314

45. FWPCA 303 d(1)(A)

46. EPA and the state are to jointly establish the TMDL, more commonly known as waste load allocations. The first step was for EPA to publish information on, and the identification of, pollutants suitable for maximum daily load measurements (§304 a(2)(D)). The second step was for the state to submit within 180 days of the EPA publication, a list of state waters and

maximum daily loads for the pollutants identified by EPA. As EPA published the identification list on December 28, 1978 (43 Fed. Reg. 60662), but the Commonwealth had not yet promulgated its list as of June 1980.

47. 40 CFR 130.43

48. See Notes 99 and 100 infra.

49. See note 29 infra.

50. 33 CFR 125.15 (1977).

51. EPA may veto a permit or modify it with conditions. FWPCA 402 d(2). Memorandum of Understanding between the SWCB and the Regional Administrator, Region III, EPA, March 22, 1975. The transfer is defined by a long list of EPA conditions. See SWCB. 1978. "Regulation No. 6 NPDES Permit program" in: Statutes, Regulations, Policies Publication No. RB-1-78, p. RB-3-1.

52. 33 CFR 124.34 (1977).

53. Virginia Oyster Packers and Planters Association v. State Water Control Board, (No. A-609) (Cir. C. City of Richmond, Div. I).

54. Chesapeake Bay Foundation v. United States, 453 F. Supp. 122, 125, 126 (E.D. Va. 1978).

55. See note 26 infra.

56. Specifically information was requested on
    1) refinery and marine terminal ownership
    2) sludge and ash disposal
    3) oil spill prevention
    4) bilge and ballast disposal. See a review in Memorandum M.A. Bellanca, WCB to S. Wilburn, COE 7 September 1977.

57. Other problems including handling of rainwater runoff, discharge of untreated effluent, discharges to publicly owned treatment works and ocean dumping permits - Letter, M.L. Meadows, TRO, SWCB to Leo Early, HREC 27 September 1974.

58. FWPCA (1977) §403, 33 U.S.C. 1343

59. The March 31 action was actually a reapplication including revisions on a March 10 application.

60. See "Jensen defends refinery stand" Times Herald 3 June 1976.

61. The response to public notice in the staff's opinion, did not indicate any controversy over the company's plan to construct a marine terminal. Therefore, a public hearing was not deemed

necessary. The response was as follows:

	Favor	Oppose	Request for Public Hearing	Total
Local Organizations	31	1	0	32
Local Citizens	60	1	1	62
	91	2	1	94

On the advice of the Attorney General, the WCB limited consideration on the HREC application to construction and operation of the marine terminal and associated dredging. Refinery operations were not considered. The WCB staff included condition to "...cover every contingency."

62. See "Marine terminal approval stands" Virginian Pilot 29 June 1976.

63. Reports by VIMS and the BSS stressed adverse effects of chlorinated hydrocarbons as might be found in the chlorinated sewage of the treatment plant. Both reports issued in late April were in response to COE requests for comment on the Corps PFEIS. VIMS recommended the refinery build its own treatment plant. See Letter W. J. Hargis, VIMS, to G. McCarthy COE, 26 April 1975. In one instance environmentalists verbally agreed to drop their opposition if the company changed its discharge

site to the Elizabeth River. The company did and the environmentalists did not. See "Refinery would run own waste process plant" Ledger Star 10 May 76 and "Wastewater plant switched to river" Virginian Pilot 11 May 1976.

64. The state was to construct an interceptor system in Suffolk to convey sewage from Suffolk and HREC to the Nansemond plant. Until the Nansemond plant was built, an interconnector would shunt wastes between the interceptor and the Chesapeake - Elizabeth treatment plant. The Nansemond plant is unfunded and not yet built. See "Sewage plant squeeze hits Virginia" Times Herald, 28 September, 1978.

65. See Chapter 3, note 12 infra.

66. Memorandum, L. S. McBride, WCB to J.M. Alexander, WCB, March 30, 1976.

67. Memorandum, D. Brion, WCB to G. P. McCarthy, COE April 28, 1976.

68. The proposed plant would utilize latest techniques of ultraviolet/ozonation disinfection of the wastewater, in lieu of chlorination, which had been shown to be potentially harmful to oyster larvae.

69. Opinion memorandum, Attorney General Andrew Miller to the WCB, 7 January, 1977. "Because these spills would not result but for

the operation of the refinery and marine terminal, and because such spills would result from operations integral to the operation of those facilities, those spills must be deemed constructive discharges by HREC."

70. The WCB did not consider the report before it voted because it arrived late. EPA also said it didn't object to issuance of a permit limited to pollutants and corresponding limitations in the proposed water permit. See "U.S. advice sent to WCB late." Virginian Pilot 2 February, 1977.

71. The issue nearly was defeated as the vote deadlocked at 3-3. See "Refinery in jeopardy" Daily Press, 1 February, 1977.

72. The Board concluded the potential for spills associated with the operation of the proposed refinery did not pose an unacceptable risk to the quality of state waters. HREC objected strongly to the "confusing and possibly illegal" conditions placed upon it. ("Energy firm disputes waste permit string" Virginian Pilot 26 February, 1977). At issue was the WCB requirement which made it the responsibility of the company to clean up oil spills from vessels proceeding to and from the refinery, vessels over which it had no control. The permit also placed a biological monitoring and bioassay requirement a HREC). On further study, the company consented to build under the conditions.

73. State Water Control Board permit #VA 0053171

74. Note 45 infra.

75. See opinion by Marvin F. Cole, 2 May 1978, VOPPA et. al. v SWCB, HREC. Case No. A-609 (C. Ct. Richmond). VOPPA claimed the WCB did not consider all information available to it and did not have enough "creditable evidence" to support its findings as required by state water control law, Va Code Ann. 62.1-44.29(7) (1977). Further the oystermen stated the Board should have considered an environmental impact statement prior to issuance. Since EPA transferred the responsibility for the NPDES program to the Board, granting the permit constituted a major federal action, requiring an EIS under the NEPA. The judge disagreed in both instances.

76. See note 54 infra. Chesapeake Bay Foundation, Inc. v. United States, 445 F. Supp. 1349 (E.D. Va. 1978).

77. The other three issues were: 1) EPA and the WCB failed to set total maximum daily loads priority rankings required by ∞303 and 304 of the FWPCA 2) the SWCB issued the permit contrary to substantial evidence and 3) certain state administrative procedures were not followed. Judge Mehrige stated the court did not have jurisdiction in these state matters.

78. Id. Chesapeake Bay Foundation v. United States. No. 77-0376-R E.D. Va. 28 June 1978. See Pending Litigation, ELR 65514.

79. Va. Code Ann. 62.1-44.83 et. seq. (1977) The Groundwater Act of 1973.

80. The figure was derived as follows: Portsmouth during this period pumped about 5 million gallons of groundwater daily or 20 percent of its total supply. The other 80 percent or 20 million gallons came from surface reservoirs, unregulated by law. As well water and surface water were mixed in a constant ratio it seemed 20 percent of HREC's total requirement or 400,000 gallons of groundwater would be pumped.

81. Letter D. Evans to Warren Braun, Chairman SWCB, November 22, 1977.

82. "Refinery gets word on water," Virginian Pilot 27 September, 1978.

83. "Refinery risk to river cited" Virginian Pilot 30 April 1976.

84. Carter, L. J. 1978. "Virginia refinery battle: another dilemma in energy facility siting" 199 Science 668-670. (hereinafter Carter, 1978).

85. See notes 75, 76 infra.

86. See Carter, 1978 at 669 also "Refinery waste permit okayed" Virginian Pilot 19 February 1977.

87. "EPA to back refinery effluent plan" Daily Press 9 December 1976.

88. "Energy firm deplores EPA's veto of refnery" Virginian Pilot 10 December 1977.

89. See note 81, 82 infra. The area had been designated a "critical groundwater area" in 1975 though later it was renamed a "groundwater management" area. See note 79.

90. For a concise review see: SWCB. 1976. Progress Report for Fiscal Year 1976. Richmond: Commonwealth of Virginia. p. 45.

91. See note 51 infra and EPA's comments 6 months later in "Public prods EPA on refinery issue" Virginian Pilot 1 July 1976.

92. "Permit to refinery delayed by Board" Virginia Pilot 9 January 1976.

93. "Refinery fight brings classic fight but few answers" Virginian Pilot 17 April 1977.

94. "Agency head tried to hasten refinery review" Times Herald 24 March 1978.

1. See Rodgers, W. H. 1977. "Air Pollution", Handbook on Environmental Law St. Paul: West Publishing Co. pp. 208-353 or Grad, F. P. 1979. Treatise on Environmental Law N.Y.: Matthew Bender. p. 187 for synopses of the earlier 1963 Clean Air Act (P.L. 88-206, 77 Stat. 392) and the Air Quality Act (P.L. 90-148 81 Stat. 485).

2. (P.L. 91-604, 84 Stat. 1676) and (P.L. 95-95, 91 Stat. 685) respectively.

3. Virginia Air Pollution Control Law at 10 Va. Code Ann. 17.9: 1-17.30.

4. Clean Air Act §108, 42 U.S.C. 1857a1 (1971)
Clean Air Act §109, 42 U.S.C. 1857c4 (1971)

5. Congress has precluded any weighing of the costs of achieving the standards. For a forceful criticism see: Freeman, M. A. 1978. "Air and water pollution policy" p. 12-67 in: Portney, P. Current issues in U.S. Environmental Policy. Baltimore: Johns Hopkins University. See also "U.S. news air cleanup at any cost" Virginian Pilot 3 August 1978.

6. 36 Fed. Reg. 22384 (1974), 40 CFR pt. 50

7. Clean Air Act §109(b)(2), 42 U.S.C. 1857(c)(4), (1971), 40 CFR 50.5, 50.11 (1977).

8. 40 CFR 51, Subpart B - Plan Content and Requirements (1977).

9. 40 CFR 51.12, 51.22 (1977).

10. 40 CFR 51.18 (1977).

11. 40 CFR 60.100 (1977).

12. VAPCB. 1976. Regulations for the Control and Abatement of Air Pollution, Revision No. 4 §2.33.

13. 40 CFR 51.13 (1977).

14. 41 Fed. Reg. 55524-30 (1976), codified in section 129 of Clean Air Act, 42 U.S.C. 7470-7491 (1977).

15. H.R. Rep. 95-294. 95th Cong. 1st Session 208 (1977). An excellent review of the problem appears in Rosenberg, R. H. and B. Friedman. 1979. "Air quality and industrial growth: the location of new industrial sources of pollution in non-attainment areas". 11 Nat. Res. L. 523-567.

16. 42 U.S.C. 7503(1) A (1977).

17. Id. at 4

18. Id. at 3

19. Id. at 2

20. 42 U.S.C. 7470-7500 (1977) 43 Fed. Reg. 26403-26409 (1978)

21. 42 U.S.C. 7473 (1977) 40 CFR §§52.01, 52.21 (1977).

22. 42 U.S.C. 7473(b)3 (1977), 40 CFR 52.21 (1977).

23. 42 U.S.C. 7473(b)3 (1977)

24. See letter, J. Daniels, APCB to S. Wilburn, COE 30 August 1977.

25. This, the first negative comment by any regulatory agency, was given wide press coverage. The conclusions drawn were known by the APCB as the data came from Region VI offices in Virginia Beach. The dramatic way in which the pronouncement was made was unexpected. Termed an "ecological veto", the EPA spokesman noted a "...disturbing pattern of increases in chemical oxidants." in Tidewater area. "Agency joins foes of refinery" Virginian Pilot 20 April 1976. The APCB felt that by the time the plant was in operation, hydrocarbons from auto exhausts, a chief contributor to the high oxidant levels, would have been reduced by pollution control devices to acceptable levels..." diminishing the potential impact of refinery emissions. "Trouble in the air" Virginian Pilot 21 April 1976.

26. See note 22 infra.

27. Anthropogenic nitrogen oxides pollution (NO, NO_2) is the product of high temperature oxidation of atmospheric nitrogen. Once in

the atmosphere, the oxides are involved in natural photochemical reactions (the NO_2 photolytic cycle), producing atomic oxygen (O) and ozone (O_3). In the presence of hydrocarbons released during internal combustion however, hydrocarbon free radicals compete for the oxygen and ozone, complexing with primary pollutants and other radicals to form photochemical smog. For further comment see Stoker, H.S. 1976. Environmental Chemistry. Dallas: Scott Foresman and Co. p. 50.

28. 41 Fed. Reg. 28643, July 12, 1976.

29. EPA Report - EPA 450/3-76-037 Nov. 1976.

30. See note 12 infra.

31. Memorandum for file, Director, Division of operations and procedures, APCB, 12 July 1977.

32. Cutback or solvent-based asphalt is typically used for road surfacing, "dust palliation", and the priming of potholes before filling with emulsion or water-based asphalt. The Virginia Department of Highways and Transportation had, on a very limited scale, voluntarily started reducing the amount of cutback asphalt prior to its suggestion as an offset.

33. Normally final determination on the permit is made within 90 days from the receipt of a completed application. However, extensions

may be granted for an additional 90 days at the request of EPA or HREC. EPA must make a final determination in any event, within one year. EPA funded the Pacific Environmental Services, Inc. study on emissions from the refinery and marine terminal, and held the permit application in abeyance until the report was released in November 1976. EPA had announced the 30 day public comment period in March 1977, within 90 days from the release of the report.

34. 43 Fed. Reg. 26406 (1978).

35. Several related cases were filed in 1978. Citizens to Preserve Spencer County vs. Costle 78-1002, Alabama Power Co. v. Costle, No. 78-1006, American Petroleum Inst. v. Costle, No. 78-1008. All addressed transitional problems in PSD program.

36. EPA's Office of General Counsel was at the time reviewing the PSD regulations to determine if legal authority existed to extend the HREC Permit beyond March 12, 1979. Letter, J. Schramm, EPA to R. Porterfield, HREC, 25 January 1979. HREC petitioned EPA for an extension beyond that time noting the Corps had not finished its deliberation. At substantial expense, "in good faith" it had filed a second PSD permit when the new regulations were promulgated. Since it had taken 13 months from June 21, 1976 to July 25, 1977 to process the initial permit, and since the second PSD permit review hadn't been started by February 1979, the time

of writing, it requested an extension to avoid "arbitrary and inconsistent treatment." Letter J. M. Hines, counsel for HREC to D. M. Costle et al., EPA 2 February 1979. EPA extended the permit to 25 July 1979 and ultimately to 25 May 1980. Letter J. Schramm, EPA to J. M. Hines, representing HREC 19 March 1979. (hereinafter Hines, 1979)

37. EPA, via its subcontractor's analysis showed emissions from the refinery would consume 17% of the allowable increment for TSP and 99% of the allowable increment for SO_2. Strict standards mentioned in note 44 were imposed as a result.

38. For a summary of the decision and its rationale see the Technical Support document - HREC, Portsmouth, Va. 25 January 1980. The conditions appended to the permit were as follows: the refinery use low sulfur fuel (less than .3%) in process heaters to decrease NO_x levels, ships and barges utilize low sulfur fuel (less than 1%) to power auxiliary units when docked at the terminal, only one tanker be offloaded at a time, a 1 hour maximum as well as daily average emission rate be imposed on each of the refinery stacks.

39. EPA has notified HREC that a recent ruling by the U.S. Court of Appeals D.C. Circuit in Alabama Power Co. v. Douglas M. Costle (78-1006) will have significant impact on EPA's PSD permit

program. The PSD regulations will be modified and permits may be re-evaluated.

40. The "...state was bending the rules to benefit a single industry rather than protect the environment." "Board to vote on refinery permit extension" Virginian Pilot Currents, 28 September 1977.

41. EPA had allowed Pennsylvania to compute its emission offset for the New Stanton, VW plant assuming 100% solvent evaporation in the cutback asphalt. An EPA technical report for information purposes only, suggested the solvent evaporation was significantly lower. On the basis of these new figures EPA changed its policy. This meant the figures computed by the air board for the emission offset were greater than if the figures were determined from the technical report. The air board added the highway district of Fredericksburg to further reduce hydrocarbon emissions.

42. Memorandum to file, Director, Division of Compliance 26 September 1977. The APCB told EPA this "...change of guidelines as we went down the road, had to stop." The Director of EPA's Air and Hazardous Materials Division responded to the APCB, "I know you are aware we are dealing with an issue for which there is still a great deal of uncertainty. We had very little hard scientific data upon which to base a decision.

I know that our deliberations seemed at times confused and that this made your difficult job even more difficult. This has been a source of great frustration to me as well... but I think we have finally arrived at a sound basis for action..." Letter, G. Rapier, EPA to W. Meyer, APCB 30 September 1977.

43. The three submissions all relate to the deficiencies evident in the SIP revisions. On March 17, 1978 submission more clearly stated the agreement with the Department of Highways and Transportation (DHT) and changed the annual emission rates to hourly emission rates. The Attorney General affirmed the legality and enforceability of the agreement with DHT on May 26, 1978. The August 9 document included HREC's revised permit, stating emissions limitations in pounds per hour in accordance with EPA's request.

44. Some misunderstanding by the public was evident. Environmentalists "...accused state officials of 'juggling figures' for air pollution standards to get what's needed to make the Portsmouth proposed oil refinery a reality." "Figures juggled in refinery talk citizens claim" Virginian Pilot 8 August 1978.

45. 43 Fed. Reg. 46554 (1978).

46. The marine terminal had not been included in the original application though the emissions computed at this time by EPA and its contractor (200 tons per year). When added to projected hydrocarbon emissions from the refinery (1293 tons per year) the total was even then substantially less than the offset (1931 tons per year). Since ozone levels were higher spring-summer-fall months the theory of a "seasonal offset had some credence. However since usage of cutback asphalt was highest during these months, reductions in that usage would coincide with the higher levels. See EPA 1978. "Final Rulemaking on a revision of the Virginia State Implementation Plan (SIP)."

47. The permit was extended to October 7, 1981 and included an amendment clarifying a required vapor recovery system at the marine terminal.

48. Alabama Power Co. v. Costle ___U.S. App. D.C.___, ___ F. 2d ___ (No. 78-1006, December 14, 1979).

49. 40 Fed. Reg. 51924 (1979).

50. Hines, 1979. p. 4.

51. See note 43 infra. Ozone production and movement throughout the Hampton Roads Air Quality district is a good example. The relationship between NO_2, hydrocarbons and ozone formation is under investigation, the contribution of natural ozone formation to the areas problems is unknown, ozone transport in and out of the area is poorly understood.

1. U.S. Army Engineer District, Norfolk, Va. 1977. Final Environmental Impact Statement - Hampton Roads Energy Company's Portsmouth Refinery and Terminal, Portsmouth, Va. (hereafter referred to as FEIS, 1977).

2. Office of the Chief of Engineers, Washington, D.C. 1978. Final Supplement to the Final Environmental Impact Statement - Hampton Roads Energy Company's Portsmouth Refinery and Terminal Portsmouth, Va.

3. "The Corps modern history shows a dramatic transformation from a narrow and specific mission in navigation to a broad and discretionary mission in multiple purpose water resource development." Andrews, R.N.L. 1979. "Environment and energy: implications of an overloaded agenda" 19 Nat. Res. J. 488; Notes 1971. "Corps of Engineers - new guardians of ecology." 31 La. L. R. 666-681; Powers, G. 1977. "Fox in the Chicken Coop: the regulatory program of the U.S. Army Corps of Engineers" 63 Va. L. Rev. 504-519 (Power).

4. See CEQ regs at 33 CFR 1500, 7 b (1978) The Corps is the lead agency as it is the permit granting agency for work in navigable waters, "... relevant factors to determine an appropriate lead agency include time sequence in which agencies become involved, magnitude of involvement, and relative expertise with respect to environmental effects."

5. 33 CFR 209.120 h(iv) (1977) initial processing may proceed until a definite action is taken by another agency. (Later editions of this regulation exist, this one and those included later were in force during HREC's processing).

6. § 404 b(c), 33 USC 1344 (1977).

7. OCE may overide EPA's decision if it is evident navigation may be impaired by that action.

8. § 404 FWPCA, 33 USC 1251 et. seq. (1972), § 10 RHA of 1899 33 USC 407. The Rivers and Harbors Acts were passed by Congress to regulate activities affecting navigable waters and their tributaries. It was never designed to serve as a pollution control statute but that role was assigned to it by the judiciary. From 1959 an even more important environmental role was ascribed to § 10 until the FWPCA was amended in 1972. The relationship between the FWPCA and RHA is found in 511 of FWPCA: § 404 is more important to water quality but does not hinder use of § 10 in matters of navigability.

9. 33 CFR 209.110-410 (1977) There is no shortage of procedures with which to comply, prompting one reviewer to label the process more "procedural than substantive ... the regulations are designed merely to lay out the course that permits must follow en route issuance." Powers at 534.

10. 33 CFR 209.120 f(4) 1977.

11. See discussion of these permits infra.

12. 33 CFR 209.410 e(iii) 1977.

13. The NEPA requirements are none too specific. They have been criticized as "ambiguous" Power at 530; "not a vision of clarity," by Karp, J. P. 1978. "Judicial review of environmental impact statement contents" 16 Am. Bus L. at 129.

14. Preparation of HREC's EIS followed these outlined in Regulation 1105-2-507 15 April 1974 Preparation and Coordination of Environmental Statments. See Appendix D of the regulation for a flowchart of the process. Note if NEPA utilized other laws must be considered see 33 CFR 209.120(1) (1977).

15. 33 CFR 209.120 p(ii) (1977) for a list of exceptions to this rule.

16. The Corps is divided administratively into district, divisional and national headquarters. The majority of all decisions are made by the local representative, the District Engineer. The entire U.S. is divided into 38 districts and 12 divisions based on hydrologic criteria. The district office with responsibility for Tidewater Virginia is in Norfolk, supervised by Divisional headquarters in New York and National headquarters in Washington,

D.C. The agency is headed by a civilian administrator, the Secretary of the Army.

17. 33 CFR 209.120 Appendix B (1977). 33 CFR 209.120 g 4(i)(ii) Outlined in the Memorandum of Understanding was a mechanism for coordination at all levels between the two agencies.

18. Ibid.

19. 33 CFR 209.120 f 3(ii) (1977).

20. 33 CFR 325.2(d) (1978).

21. Ibid.

22. 33 CFR 325.4 (1978).

23. See note 15 infra.

24. 33 CFR 209.120(f) (1977) A later report advised expansion of the list even further to include, "... conservation of natural resources, air and water quality, aesthetics, scenic views, historic sites, ecology and other public interest aspects." See House Committee on Government Operations, 1972 Our Waters and Wetlands: How the Corps of Engineers can prevent their destruction and pollution." HR Ref. No. 917, 91st Cong, 2nd session, at. 6-10.

25. Specifically NEPA, CZMA, FWPCA, MPRSA.

26. 33 CFR 320.4(a) (1979).

27. Powers at 521, reviewing NRDC v. Calloway 392 F. Suppl. 685, 686 (D.D.C. 1975) and the ensuing struggle between special interest groups, EPA, the Corps and Congress.

28. 33 CFR 320.4a (1) (1978).

29. 33 CFR 209.120 F(2) (i-iv) (1976).

30. Powers at 530.

31. Powers at 534.

32. See Quarles, John 1979. Federal regulation of new industrial plants. Monograph 28 Washington, D.C.: Bureau of National Affairs at 36.

33. Powers at 551.

34. As early as 1971 an "impact statement" was assembled by counsel for HREC, then MACEC. It was inadequate, an hastily prepared document, and recognized as such. See letter 9 November 1971, L. E. James to T. R. Davis Foster/Wheeler.

35. No. NAOOP 75-2256, 25 April 1976.

36. The finding was reported to the public in "Corps: refinery won't hurt nature" Times-Herald 20 November 1975. The majority of

negative comment prior to this point had not been received by federal or state agencies but by private citizens and special interest groups such as most notably Nansemond Oil Refinery Opposition Fund, Tidewater Refinery Opposition Fund, Council on Environmental Quality Inc., and Citizens Against Pollution, Junior Women's Club of Hilton Village.

38. See CHAPTER V infra. The opposition was related to high ozone levels in the Tidewater area, a region in violation of NAAQS for that pollutant. The public hearing had been requested by special interest groups including TROF, Edgewater Garden Club, Jr. League of Norfolk, Keep Tidewater Green, Inc.

39. These comments are recorded in Appendix P of the Final Environmental Impact Statement (FEIS, 1977).

40. See Letter, W. J. Hargis, VIMS to G. W. McCarthy, 26 April 1976 and Letter, C. Wiley, BSS to G. W. McCarthy, 22 April 1976.

41. The informal poll indicated 708 for the refinery, 228 against, and 90 non-committed. The Norfolk District received

approximately 476 responses on the DEIS and PFEIS categorized as follows:

Affiliation	Opposed	For
Individuals	170	213
Petitions	6 w/2160	4 w/6377
Civic	10	5
Environmental	10	-
Union and Labor	-	18
Businesses	-	30
Community Serivce	-	8
Medical	2	1

North Atlantic Division Engineer. 9 January 1978. Statement of Findings - Hampton Roads Energy Company. p. 5 (Hereinafter Findings, 1978).

42. See note 151 infra. The move was termed a "welcome refinement" by the Virginian Pilot, 2 May 1976, and for the moment muted environmental opposition. As early as January 1975, HREC had considered such a move, but shelved it presumably when the SWCB declared southside Hampton Roads a "critical groundwater area" see "Southside part of critical area" Daily Press 27 January 1975.

43. See "Wastewater Permit asked" Virginian Pilot, 20 Oct. 76 "Refinery disputes put project finances in jeopardy" Virginian Pilot, 19 Sept. 76.

44. See Appendix Q, (FEIS, 1977).

45. NMFS termed the proposal a "...peril to marine resources and the seed oyster industry," Letter, D. Coggeshall, FWS to Col. N. Howard, District Engineer, 29 November 1977. FWS panned the EIS stating it failed to consider impacts on crabs, dredge spoil and oil spills. Letter, W. G. Gordon, Regional Director, NMFS to Col. N. Howard District Engineer, 4 November 1977. EPA opposed its impacts on air and water quality, groundwater supplies and marine life. Letter J. Schramm, Regional Administrator, to Col. N. Howard, 2 December 1977. See Richmond Times Dispatch, Dec. 1977 for HREC's rebuttal of EPA's "unfounded and irresponsible statements."

46. Letter S. T. Wilburn, Acting Administrator, COE to Colonel N. Howard, District Engineer, 14 Dec. 1977. See also a summary of those comments in (Findings, 1978).

47. The Norfolk office received 535 letters in response to the FEIS, 257 against and 278 for.

48. In that meeting Colonel Howard advised the Governor of his negative recommendation. For the proposal to be considered

further, Godwin's approval was necessary. Godwin confirmed the above in his statement to the press. "The only way the project can receive further consideration and proceed to a fully considered final determination is to give my approval and accordingly, I hereby do so." "Godwin ok's refinery" Daily Press, 1977. Gov. Godwin had been pressured by the Corps in early March 1976 for the states' position, and was prepared to give it until EPA's comment at the April public hearing. From that point on he refused to offer the states' opinion until Corp's was known.

49. With little additional information the Division Engineer reversed the Corps position on the proposal recommending several conditions. (Findings, 1978 p. 47-49).

50. The issue had not surfaced earlier since it was not questioned during the EIS review. Those alternatives listed in the FEIS (p. 2) were sites that developer John Evans had previously been unsuccessful in developing and as such were not viable alternatives.

51. See note 2 infra.

52. Office of the Assistant Secretary of the Army (Civil Works) 1979. Evaluation of the Hampton Roads Energy Company permit case - proposed refinery and terminal complex to be constructed in

Portsmouth Va. p. 80 (hereinafter OASA(CW), 1979). OASA(CW) declared the matrix prepared by the Norfolk District Office "...invalid as a decisional guide" and prepared a new assessment that showed the site as acceptable. OASA(CW) also performed a risk-benefit analyses related to oil spills.

53. Using 11 specific policy considerations in making his decision, he determined the environmental criticisms to be largely speculative and dependent upon events that are largely controllable. To deny a permit on such uncertainty would be contrary to public interest "Corps chief favors refinery permit," Virginian Pilot, 29 November 1978.

54. Apparent public opposition increased from District Engineer to Chief of Engineers, as 144 letters were received for the refinery and 629 against it. OASA(CW), 1979 p. 93, 94.

55. Council on Environmental Quality. 1976. EIS Statements: An Analysis of 6 years experience by 70 Federal Agencies. Washington, D.C.: GPO p. 29.

56. Ibid. at 30.

57. Findings, 1978 p. 33.

58. 40 CFR 1500.2 a(4)(5) the EIS must suggest general alternative means of performing the action and the "mitigation methods" for minimizing adverse consequences of each alternative.

59. The courts review traditionally has been more procedural than substantive. "...once an agency prepares an EIS and complies with procedures, the ultimate agency decision is unassailable, whether reflective of considerations set forth in the EIS or not. Strom, Frederick. 1979. "Introductory Survey" in Land and Environmental Law Review p. xx. See also Bardach & Pugliaresi 1977. "The EIS and the real world" Pub. Int. at 22. Karp, J. P. 1978. "Judicial review of environmental impact statement contents" Am. Bus. L. 16:127-56. Fairfax, Sally, K. 1978. "A disaster in the environmental movement" 199 Science 743.

60. Schroth, P. W. 1976. "Public participation in environment decision making" 14 Forum 352.

61. See Hill, W. W. and L. Ortolano. 1978. "NEPA's effect on consideration of alternatives: a crucial test" 18 N. Res. J. 285.

1. The point may be moot for HREC unless for some reason it cannot build the refinery. It is a success of some dimension, that HREC received all its permits, the first of many east coast refineries to do so. On the other hand, an expeditious resolution may not be in the best interests of environmentalists. In their opinion, any delay may be justified if it prevents development.

2. Virtually all of the 19 refineries proposed on the East Coast in recent years were stopped at the local level. See: Luke, R. T. 1980. "Managing community acceptance of major industrial projects," 7 Coastal Zone Management Journal 271-296 and Deal, David T. 1975 "The Durham controversy: energy facility siting and the land use planning and control process." 8 Nat. Res. L. 437-453.

3. See: Mancke, Richard. 1974. The failure of U.S. energy policy. N.Y.: The Columbia University Press 187 p.; Johnson, W. A. 1976. "Why U.S. energy policy has failed," in: Kalter R. and W. Vogeley. 1976. Energy supply and government policy. Ithaca: 305, Martin, P. 1976 "The poverty of American energy policy," 12 Tulsa L. J. 65-103; Mead, Walter J. 1978. Energy and the environment: conflict in public policy. Washington: American Enterprise Institute for public policy research. 36 p.

4. FEA ultimately became the Department of Energy. HREC mentioned the complexity of FEA policies and the rapidity with which they changed on numerous occasions. For example see, "Waste water permit asked by refinery", Virginian Pilot 20 October 1976.

5. Mead, 1976. p. 289 On August 4, 1977 yet another change was made with the creation of the Department of Energy incorporating the functions of the Federal Energy Agency, the Energy Research and Development Agency, the Federal Power Commission and parts of the Department of Interior and Interstate Commerce Commission.

6. Whitney identified the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451-64, Supp. II, 1972) as the "only law present providing possible statutory basis for a siting process." He noted only 7 states that had made some provision for energy facilities siting and planning. See Whitney, Scott C. 1975 "Siting of energy facilities in the coastal zone - a critical regulatory hiatus." 16 W&M Law Review 805 and National Ocean Policy Study. 1975 Energy facility siting in the coastal zone Washington: USGPO 125 p.

7. The state reports originally included refineries in facilities siting but later deleted them. See Division of State Planning and Community Affairs. 1975. Developments of greater than local significance. Richmond: Commonwealth of Virginia 116 p., Land Use Council. 1975. Final report findings and recommendations on the siting of key facilities. Richmond: Commonwealth of

Virginia 36 p., Secretary of Commerce and Resources. 1977. Findings and recommendations on a state posture in land resource isues. Richmond: Commonwealth of Virginia 69 p., Office of the Secretary of Commerce and Resources. 1977. Proposals for coastal resource management in Virginia. Richmond, Commonwealth of Virgnia. p. 107-111, 171-179.

8. It is ironic the same problems still face HREC in 1980. See "One man's crusade for an oil refinery" Washington Post 22 June 1980.

9. A single master agency could grant all permits at the state level. Murray, W. and C. Seneker. 1978. "Industrial siting: allocating the burden of pollution." 30 The Hastings L.J. 301-336.

10. Though delegation of authority to such a master agency for a state program is one matter, the delegation of a federal program administered by the state is entirely different. Note also the California experience in "fast-track" legislation and the inexorable centralization of decisionmaking authority in the federal government in: Ahern, W. 1980. "California meets the LNG terminal." 7 Coastal Zone Management Journal 185.

11. 43 Fed. Reg. 55978. 29 Nov. 1978, 40 CFR 1500-1508.

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